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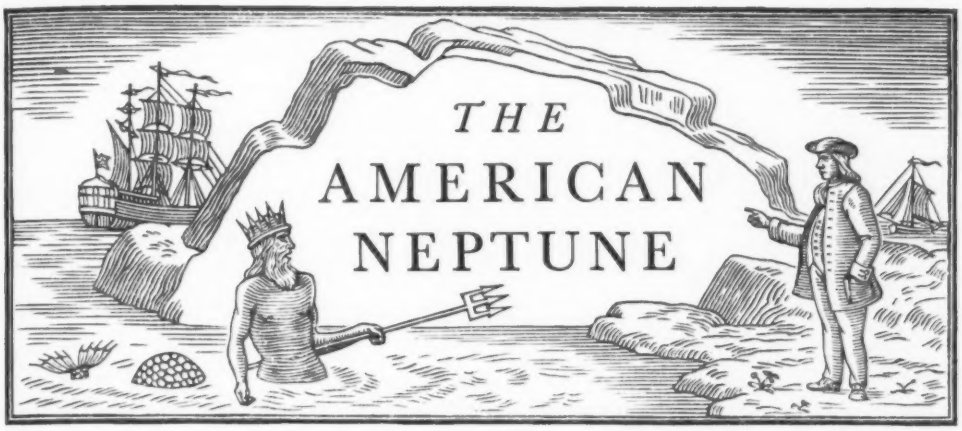


VOLUME I APRIL 1941 NUMBER 2

IN *the statement of policy in the first number of this journal it was emphasized that* THE AMERICAN NEPTUNE *is intended to serve as a means of communication between its readers; that its success will depend upon the measure of literary and historical support it receives from them, and that its continued publication over a period of years depends upon revenue from subscriptions. Along all these lines the response during the past three months has been most gratifying. New queries, and answers to those previously published, have been received. Articles upon a variety of subjects have been submitted for consideration. Subscriptions have increased to such a point that the stock of the first number, which in December seemed optimistically overprinted, is now exhausted. Disinterested propaganda by numerous subscribers, and friendly notices in various newspapers and maritime journals have been of great assistance in spreading the word, and letters received from all parts of this country and from England have brought welcome encouragement.*

With so broad a field, no two numbers can contain exactly the same type of material in the same proportion. In this issue the account of Diego Garcia de Palacio's Instrucion Nauthica *of 1587 begins a series of reviews of old maritime books. In other issues the Editors hope to open other new lines of approach, but it cannot be too often repeated that the contents of the journal ultimately depend upon the interests of its readers, and the support which they give the Editors by suggestions and by contributions of material.*

A Tidal Wave at Huanillos, Chile, in 1877

BY LINCOLN COLCORD
Penobscot Marine Museum, Searsport, Maine

THE following letter was written by Captain E. D. P. Nickels, master of the American ship *Resolute,* to his brother in Searsport, Maine, Captain J. C. Nickels, who was managing owner of the vessel. It tells in vivid and seamanlike terms the story of a famous earthquake and tidal wave that devastated the coast of Chile on 9 May 1877.

The port of Huanillos, from which this letter was written, is situated on the straight north-and-south coast of Chile about a hundred miles south of the important nitrate port of Iquique. It is an open roadstead in the extreme sense of the term, fronting the Pacific on a bold shore without shelter and overshadowed by the mighty range of the Andes. It constituted, together with Lobos Point twelve miles to the northward and Pabello de Pica twenty-five miles to the northward, a group of three localities known in the days of the west coast guano trade as the 'southern guano ports.' They were not ports at all, but merely loading points, which had grown up because of important local deposits of guano. Nowhere in the world could shipping be so completely at the mercy of seismic disturbances as in these exposed anchorages which literally hung on the edge of a volcanic mountain range.

The fleet at Huanillos evidently consisted of twenty-six vessels; this is the number listed by Captain Nickels. Of these two were sunk outright with loss of life, two were completely wrecked on shore, eighteen were seriously damaged, and only four escaped without injury. The fleet at Pabello de Pica, Captain Nickels states, consisted of twenty-seven vessels, of which ten were sunk and only two escaped without damage. Assuming that a similar fleet of twenty-five odd vessels lay at Lobos Point, the catastrophe affected some seventy-five square rigged ships in this immediate locality.

I have never seen a first-hand account of the 1877 tidal wave from Pabello de Pica or Lobos Point, with lists of vessels in these ports and the damages sustained by them, although such accounts undoubtedly

exist in letters from ship masters who went through the experience there. It would be interesting if we could receive some of these for publication in THE AMERICAN NEPTUNE.

The ship *Resolute,* Captain Nickels' command, was built by William H. Webb at New York in 1857, to be operated in the Black Star line of Liverpool packets under the management of Williams & Guion. A vessel of 1645 tons, 190 feet in length, 40.3 feet in breadth, and 28 feet in depth, she had three decks and was diagonally iron strapped for strength. Built just as the depression of 1857 was coming on, she was soon diverted to the general carrying trade.

In 1871 the *Resolute* was purchased from Williams & Guion by Captain J. C. Nickels, who recently had lost the clipper ship *Wild Rover* on Long Island. Thereafter for fourteen years she was owned and managed in Searsport, Maine, though hailing from New York, commanded by various Searsport ship masters. One of these, Captain Wilson C. Nichols, disappeared from her deck on a voyage from Cardiff to Rio de Janeiro under circumstances which have never been explained. The *Resolute* finally was sold to Dutch account, going under the flag of Holland without change of name. Re-rigged as a bark, she was abandoned in a sinking condition in March 1886, on a passage from Philadelphia to Europe.[1]

CAPT. J. C. NICKELS, Huanillos, Chile, May 13, 1877.
Searsport, Maine, U. S. A.

Dear Sir:—

Since I last wrote you a most terrible calamity has visited the shipping and towns at these southern guano deposits. On the 9th inst., at 8.30 P. M., occurred one of the severest earthquakes ever experienced by anyone here, followed by a tidal wave. I will try to describe it, but the terrors must be imagined.

On the morning of the 9th I found on heaving in the starboard chain, (having re-moored the ship the day before,) that it had unshackled at 30 fathoms and that the anchor was lost. We got the spare anchor over as soon as possible, and then took in the guano lying alongside, which was finished at 7 P. M. When I came on board at 6 P. M. and found that the mate had not time before supper to overhaul a range [of cable], I told him as it was so late he might let the men get supper and overhaul the range afterwards. But he, thinking it better to finish at once, did so before supper. The men had just finished their supper and hoisted the boat when the ship began to tremble.

[1] Frederick C. Matthews, *American Merchant Ships: 1850-1900* (Salem: Marine Research Society, 1930-31), I, 260-263.

The Earthquake

At first we experienced a trembling which increased for one-half minute or more; it kept growing stronger, lulling at times. It shook the ship like a leaf and you could hardly stand on the deck. The shock lasted in full strength perhaps two or three minutes; then it passed away. Then came a most terrifying noise from the shore, rocks rolling from the mountains into the water, making a deafening roar, which in the intense darkness was appalling.

After this had subsided, (perhaps ten minutes after the earthquake,) Capt. Adams of the ship *Theobald* shouted to me to slip stern moorings, as his ship was coming down on us. Before we could slip they parted, and we swung half around. We immediately let go the starboard anchor and paid out all the chain on deck. All this was caused by the first receding wave.

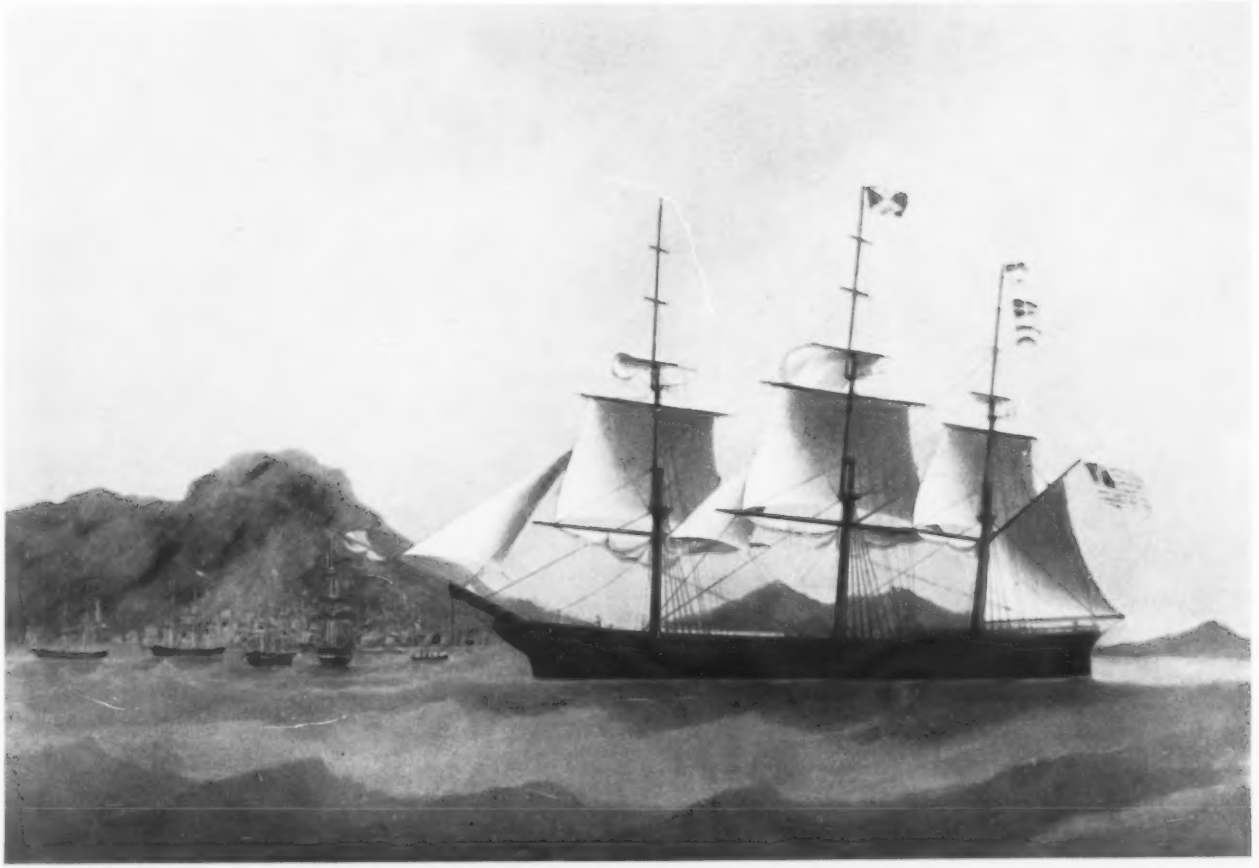
Scene 2nd.

Then the tidal wave came in like a boiling cauldron, ships taking anchors and chains with them as though they were feathers, and in the rush vessels shot round and round and collided with each other, going at the rate of eight to ten miles per hour. All we could do with the ship was to steer her. All around us we could hear crashing vessels. One vessel crossing our bow carried away the jibboom and fittings attached.

Scene 3rd.

After a lull of perhaps fifteen to twenty minutes, again the ships began to revolve and twist about and again vessels crashed and groaned in collision. Several were sunk at about this time. Howbeit, Almighty God kept us clear of all vessels doing us serious damage until 11.30 to 12 midnight, when the British bark *Samuel* backed stern first into the stern of this ship, striking us about the upper part of the stern moulding, breaking two planks only. Soon after, (at this time the rush of tide was greatly diminished,) the British ship *Wm. Leavitt* struck this ship, carrying away the bumkin on the port side, crashing the main rail for ten feet, etc. Again we swept clear, and soon after the ships circled completely around each other, and being entangled, we lashed the ships together to prevent further damage, or rather to prevent very serious damage. From midnight until daylight the tide became gradually diminished, and at last subsided with frequent shocks of earthquake.

When daylight broke all in sight was wreckage. Two ships were sunk, the *Geneva* and the *Avonmore*. The crew of the former were saved. But the fate of the *Avonmore* was shocking. Capt. Corfield (the master) was an old acquaintance of ours, having been with us in Callao and Lobos the



Ship *Resolute*, built at New York by William H. Webb, 1857

Oil painting by Lai-Sung, Hongkong, in the collection of India House, New York

PLATE I

Ship *Jeremiah Thompson*, built at Greenpoint, Long Island, 1854

last time, and having been well acquainted with him when mate of the ship *Live Oak* with Capt. Coombs at the Chincha Islands. He had on board Mrs. C., a most amiable lady, and three of the loveliest children I ever saw, Harold, the eldest, four years old, Mabel, two years old, and an infant five months old, together with the nurse. Capt. Trick of the British ship *Arctic* was visiting them. They all went down together, and only Capt. Corfield, with Harold, who died in his father's arms an hour after, were saved. On the next two days one by one his family were found, and services and prayers read over them. The poor father, who was so proud of them all, is nearly heart-broken, but he has been our guest and we have done all in our power to alleviate his sorrows. Besides these about eight seamen were drowned from the ships that sunk and went ashore.

At 4 A. M., and as soon as I dared, I sent Emma [Mrs. Nickels] in charge of Mr. Curtis [mate of the *Resolute,* afterwards Captain Henry G. Curtis] on board the ship *C. F. Sargent* of Yarmouth, which vessel was lying clear and apparently uninjured. I have just taken her [back] on board tonight. She behaved splendidly and I am proud of her bravery. I had her forward three times to avoid falling spars while in collision.

We have since had frequent moderate shocks, but of course nature will not find its equilibrium at once after such convulsions. The Governor's house, safe, Consul's building, Captain of the Port's house and office containing every ship's register, have been swept away. Only a few hovels remain at the upper part of the town. Strange to say we have saved the [guano] launches, which hung on alongside throughout the whole disaster.

Out of the fleet at P. de Pica[2] of twenty-seven vessels, only two escaped without damage; the rest are all seriously damaged, ten of which have been sunk. At the town of P. de Pica only one house remained; about 100 lives were lost on shore but only one life lost in the fleet. About half of the ships at Lobos Point were lost or seriously damaged.

At daylight we commenced, aided by half of the crew of the *Geneva,* to clear the ship from the ship *Wm. Leavitt.* The chains of both ships were around each other one or two turns, and the ships could not be swung without getting afoul of other ships. The *Resolute* and *Wm. Leavitt* were grinding heavily and chewing up fenders nearly as fast as we could put them in. The Capt. [of the *Leavitt*] went on shore in the morning to get a steamer. It was impossible for us to slip, as we had no spare anchor, and when we got his spare anchor over, the Capt. was away ashore drinking. The consequence was that after our ship had been pounding with the

[2] Pabello or Pabellon de Pica, twenty-five miles north of Huanillos.

W. L. for 30 hours, the *W. L.* slipped and was towed outside. She went to sea to-day badly cut up, bound to Callao.

After all our hard knocks, only three vessels lying in our part of the fleet have escaped with as little damage as we. Our anchors are so entangled together with those of the other ships that I doubt if we ever get them. Damages received, as far as can be seen at present: mizzen topgallant-mast carried away; 2 stern planks and sheathing broken; main rail and bulwarks, 10 feet in length, crushed aft on the port side; bumkin and fashion piece, port side, carried away; lower mizzen guard boards crushed; rail on after house broken, ten feet; main sheet bolt carried away; main lower guard boards badly crushed, and chain plates badly bent; several planks about the fore rigging considerably bruised; forward side, port, badly bruised; head rails, jibboom, fiddle head, etc., carried away, besides jibboom guys and jumpers; several lanyards and ropes in fore, main, and mizzen rigging chafed; several treenails started in the bends; three lodging and two hanging knees in upper and lower between decks started.

I have been sounding the ship on the port side with caulking irons, which [side] has been caulked since our arrival here, and have found the seams good thus far, although she has been severely shaken. Nearly all the ships which have received much damage have gone to Callao, and I know not what to do. I know not how the ship is insured, but if I hear nothing shall act for the good of all concerned.

One of the most serious parts of this dilemma is that no ships can get their anchors, and as all ours are on the bottom God only knows when we will be able to save them. About 12 of the original fleet will remain here to finish loading, and many more are bound here. The north shoots [chutes] with stages, etc., were washed down by the terrible surf this morning. Here more than two-thirds of the guano was shipped, and it will take at least six months to repair the damage, as the whole structure is demolished. I cannot predict when they will begin to ship guano from the other shoots. I don't think our lay-days by the charter party are counting. I wish I knew what to do with the ship, but I shall wait a while and learn more before I act.

Since sitting here writing we have had quite a shock of earthquake.

You have now the particulars as nearly as I can write. Trusting that however I act in this matter you will be satisfied,

I remain

Yours Truly

Emma joins me in love to you and Nettie. E. D. P. NICKELS.

LIST OF SHIPS AND DAMAGES RECEIVED BY THE TIDAL WAVE OF WEDNESDAY

Huanillos, May 12, 1877

American ship *Geneva*. Total wreck.

[Built by Houghton Bros. at Bath, Maine, in 1874. 1535 tons, 216.4 x 39.9 x 24.6. Hailed from Bath. ED.]

American ship *Benjamin Sewall*. Fore royalmast gone. Starboard side badly bruised. Slipped port anchor, gone to Callao.

[Last vessel built by C. S. Pennell & Co. at Brunswick, Maine, in 1874. 1362 tons, 202 x 38.9 x 24.1. Hailed from Boston. Wrecked on the Pescadores in the China Sea in 1903. ED.]

American ship *Theobald*. Fore topgallant-mast gone. Windlass carried away, besides other slight damage.

[Built at Richmond, Maine, in 1861. 981 tons, 172 x 34 x 23.6. Hailed from Richmond. ED.]

American ship *C. F. Sargent*. Rudder head carried away.

[Built by C. F. Sargent & Co. at Yarmouth, Maine, in 1874. 1704 tons, 220.3 x 41.3 x 26. Hailed from Yarmouth. ED.]

American ship *Jeremiah Thompson*. Jibboom and head gear all gone. Starboard bulwarks all smashed in fore and aft. Whole of starboard side badly cut and bruised. After house smashed in. Copper badly cut and torn. Slipped both anchors and gone to Callao.

[Built at Greenpoint, Long Island, N. Y., in 1854. 1904 tons, 216 x 43 x 28. Hailed from New York. Probably built for a packet ship in the Black Ball line. ED.]

American ship *Resolute*. Jibboom and head gear all gone. Billet head and head boards all smashed in. Whole of port side badly cut and bruised. Port channels all gone. Bulwarks from mizzen rigging aft all gone. After house smashed in. Copper on both sides badly cut and torn. Mizzen topgallant-mast carried away, besides other damage.

English ship *King Cholric*. Jibboom gone, besides other slight damage.

[Wooden ship, built by J. K. Dunlop at Portland, New Brunswick, in 1875, 1582 tons, 222.2 x 40 x 24. Hailed from St. John. ED.]

English bark *Sir John Lawrence*. Fore topgallant-mast gone. Topgallant forecastle badly smashed.

[Wooden bark, built at Aberdeen, Scotland, in 1864. 879 tons, 186 x 32.1 x 20.4. Hailed from Aberdeen. ED.]

English ship *Gov. Tilley*. Fore topgallant-mast carried away. Jibboom and head gear all gone. Both sides from water to rail badly cut and bruised. Channels all gone. Copper badly scratched and torn.

[Wooden ship, built by Cruickshank at St. John, New Brunswick, in 1875. 1420 tons, 201.6 x 38.5 x 24.2. Hailed from St. John. ED.]

English ship *Canute*. No damage.

[Wooden ship, built at Quebec, Canada, in 1869. 1215 tons, 197.5 x 38.4 x 23.4. Hailed from Liverpool. ED.]

English bark *Arctic*. No damage.

[Iron bark, built at Glasgow, Scotland, in 1875. 616 tons, 176 x 30.1 x 17.4. Hailed from Swansea. ED.]

English bark *Conqueror*. Foremast gone to the deck. Jibboom and head gear all gone. Main topgallant-mast gone. Bulwarks badly smashed fore and aft.

[Wooden bark, built at Middleboro, England, in 1866. 599 tons, 165 x 29 x 18. Hailed from Liverpool. ED.]

English ship *Wm. Leavitt*. Jibboom gone. Fore topgallant-mast gone. Both sides badly smashed fore and aft. Channels all gone. Slipped both anchors and sailed for Callao.

[Wooden ship, built at St. John, New Brunswick, in 1863. 1183 tons, 179.9 x 37.6 x 23.8. Hailed from Liverpool. ED.]

English bark *Samuel*. Jibboom and bowsprit all gone. Fore and mizzen topgallant-masts gone. Stern badly smashed.

[Wooden bark, built at Quebec, Canada, in 1866. 360 tons, 130 x 28 x 14. Hailed from Bangor, Wales. ED.]

English bark *Eliza Campbell*. Completely dismasted. Bulwarks all smashed in.

[Wooden bark, built at Maitland, Nova Scotia, in 1873. 597 tons, 148.9 x 28.9 x 17.8. Hailed from Glasgow. ED.]

English ship *Avonmore*. Sunk. Complete wreck.

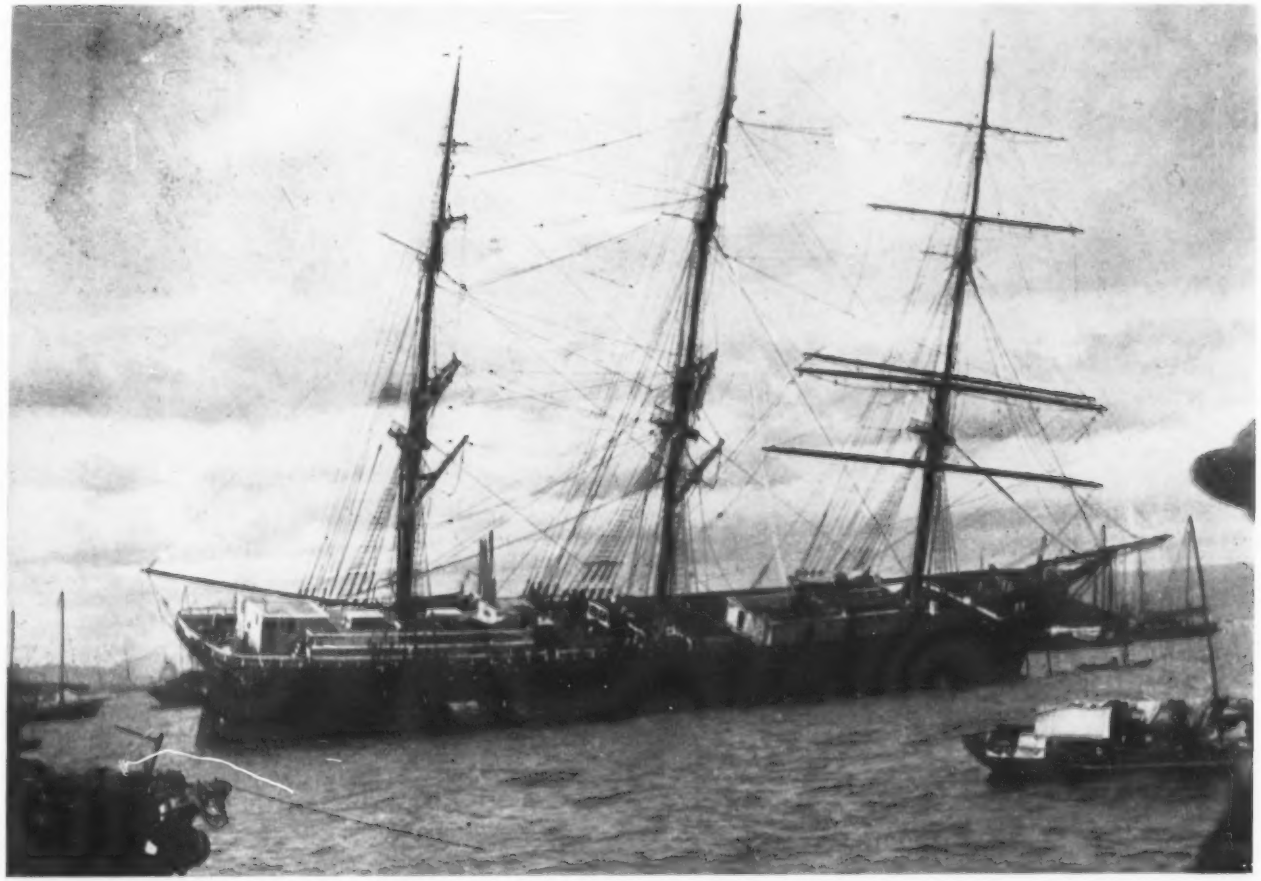
[Formerly American ship *Longwood*, built at Newburyport in 1863. 1260 tons, 193.7 x 38 x 24.2. Hailed from Bristol. ED.]

English ship *Conference*. Complete wreck. Gone to pieces on the rocks.

[Wooden ship, built at Richibucto, New Brunswick, in 1858. 967 tons, 177.2 x 36.3 x 21.8. Hailed from Bristol. ED.]

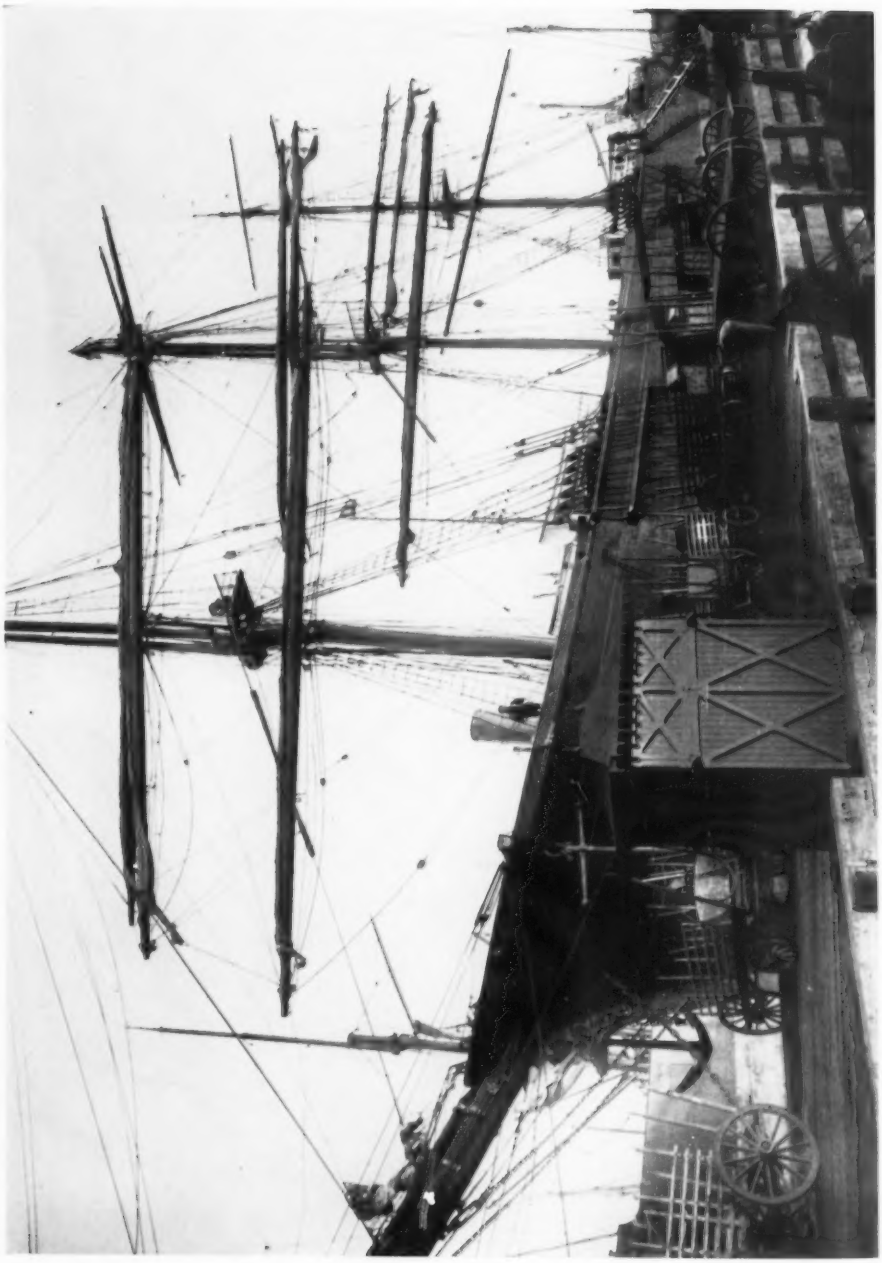
English ship *Conway Castle*. Complete wreck.

[Wooden ship, built at St. John, New Brunswick, in 1866. 1299 tons, 188.6 x 38.3 x 24. Hailed from Liverpool. ED.]



Ship *Benjamin Sewall* (built at Brunswick, Maine, 1874) in Hongkong harbour after the typhoon of November 1900

Reproduced from a photograph owned by W. A. Simonds



Ship *Benjamin Sewall*, built at Brunswick, Maine, 1874

Reproduced from a photograph by Thomas A. E. Lake in the Peabody Museum of Salem

Norwegian ship *Cleveland*. Damage slight.

[Wooden ship, built at Quebec, Canada, in 1873. 1221 tons, 207.6 x 37.8 x 23. Hailed from Skien. ED.]

Swedish ship *Gauthiod*. Foremast gone to the deck. Main topgallant-mast and jibboom gone, besides other damage.

[Wooden ship, built at Gefle, Sweden, in 1869. 803 tons, 146.9 x 32.8 x 19.7. Hailed from Gefle. ED.]

Swedish ship *Atlantic*. Lower main topsail yard broken. Port side badly cut and bruised.

[Formerly American packet ship *Atlantic*, built at Williamsburg, Long Island, N. Y. in 1846. 736 tons, 141.7 x 30.8 x 19.7. Hailed from Härnosand. ED.]

Swedish ship *Ugglan*. [?] No damage.

German ship, name unknown, iron. Jibboom and bowsprit gone. Fore topgallant-mast carried away. Bulwarks and stern badly smashed.

Italian bark, name unknown. Completely dismasted.

Italian bark, name unknown. No damage.

German bark, name unknown. Jibboom carried away.

Reproduced from a photograph by Thomas A. E. Luke in the Peabody Museum of Salem

The First Cruise of the Privateer Harpy

BY GEORGE A. NELSON

ONE of the first acts passed by Congress during the War of 1812 stipulated 'that the commanding officer of every vessel having a commission or letters of marque and reprisal . . . shall keep a regular journal . . . and such commanding officer shall immediately on his arrival at any port of the United States . . . deliver up such journal . . . to the Collector . . . of the Customs at such port.' [1]

Most of these journals covered movements of the vessels and activities against the enemy, but one deposited in 1814 at the Portsmouth (New Hampshire) Custom House is quite unlike the typical journal. This is the journal of the privateer *Harpy* of Baltimore. She was a 347 ton schooner carying 12 guns and 12- and 9-pounders, commanded by Alexander P. Griggs. Her complement was 110 men.[2]

Although nine vessels were taken by the *Harpy* during her first cruise, the most notable points of the journal are the numerous entries devoted to the crew. These demonstrate a complete lack of discipline, a surprising amount of drunkenness, and remarkably poor seamanship.[3]

The *Harpy* was commissioned in New York[4] on 12 October 1814 and immediately dropped down the Bay. Here begins the journal:

[1] Act concerning letters of marque prizes and prize goods, section 10. Passed 26 June, 1812.

[2] John Philips Cranwell and William Bowers Crane, *Men of Marque* (New York: W W. Norton & Co., 1940), p. 383.

[3] Mr. John Philips Cranwell has commented on this point in correspondence, as follows: 'Although the journal of the *Harpy* describes crew trouble more extensively than usual, Captain Griggs' experience was typical of most privateer captains. In most instances the crews were unruly, drunk, and insubordinate: only men like Barney, Coggeshall, Crowninshield, Boyle, and Ried seem to have been able to impose a man-of-war discipline on their people. Plundering of passengers on prizes, fights among ship mates, and many violations of the rules for the conduct of privateers forced on the masters by their crews' greed for prize money were some of the reasons which led to the abolition of this form of warfare. Actually these were not the chief reasons for the legal abolition, but they gave privateering a very bad name, and in some instances made its practice hard to distinguish from piracy.'

[4] Op. cit., p. 321. Because the Chesapeake Bay was frequently blockaded by British squadrons, and because New York with both a front door to the sea at Sandy Hook and a back door through Long Island Sound and hence was more difficult to blockade, Baltimore privateers frequently were commissioned at New York.

Remarks on board the Schooner *Harpy*, Friday 15 April 1814. This day very thick foggy weather from the Southeastward. At 8 A.M. sent the small boat with the pilot and 3d. lieutenant to New York for some cordage. At 10 the wind changed, very heavy squalls with heavy seas. The boat returned, made ready for getting under way. At noon weighed anchor and set all sails we possibly could in order to join with the Schooner *Sabine* which at that time lay at Sandy Hook. So ends the day and commences the nautical account.

The *Harpy* proceeded up the coast of New England in heavy seas, the only incident being the loss and subsequent rescue of a member of the crew. Off the coast of Nova Scotia on

Tuesday, April 26. These 24 hours commence with heavy sea running. At 4 P.M. hove too and employed all hands fishing. After one hour's wet and disagreeable trial, caught none. Kept away and set such sail as was necessary. Middle part of the night, blowing heavy and breaking sea over the decks and cold and freezing, the vessel tight which was our only comfort. At 2 A.M. steered East by South under easy sail. At 8 A.M. perceived several islands of ice ahead and bearing from North to Southeast. At 15 minutes past 10 A.M. jibed ship close by an island of ice bearing off us East about ¾ mile, its appearance was sound and ragged, about 180 feet above the surface of the sea. At 11 A.M. passed another lump of ice apparently about ½ mile in circumference and 200 feet high. At meridian passed the third island of ice and others as far as could be seen from the masthead.

Two days later

As the crew set down to dinner they found their peas soup was not boiled, the peas as hard as when put in the coppers. The complaint of this kind to me being daily from the crew, I ordered all hands to be called and punished the cook with one dozen lashes on his bare back and his mate half dozen for the neglect.

May brought good weather so on 5 May

At 2 P.M. the watch was called and ordered to exercise the fore top gallant yard as they were found very deficient in sending it up previous to noon. All the crew came on the deck in a mutinous spirit and absolutely refused to obey my commands in the request [respect?] of exercising any yards whatever. I reasoned the case with them, told them how necessary it was to be expert in sending up the top gallant yard in case occasion required it to be done in a hurry. I found they would listen to no reason whatever.

The end of the first month at sea found the *Harpy* in mid-Atlantic, the crew much disgruntled as they were as yet to make their first prize. Let Captain Griggs tell you about

Saturday, May 14. These 24 hours commences with strong breezes from the Eastward. At 4 P.M., perceived a sail to windward from the deck (was not seen from mastheads), called all hands to make sail, then to quarters, let out reefs, out foresail, mainsail and jib. ½ past 4 P.M. tacked and stood towards her ready for action. Soon

after, I gave orders to the man at the helm to keep the vessel more away after the chase, then perceiving her to be a brig and apparently endeavouring to escape by running off the wind, I repeated the same order several times and not being directly obeyed, I struck the man at the helm on the head with the spy glass which was in my hand. Altho a small blow, he fell as dead. The doctor directly bled him and he soon recovered and went to his bed in the birthdeck. The doctor satisfied me there was no danger of him, my sorrow for the deed was inexpressible.

The chase proved to be a prize to another American privateer and the disappointment nearly ended the cruise. The journal ends the day's account in this fashion:

At 6 P.M. John F. Baker, quarter master, was abusing Mr. Carter. I asked the reason when he abused me with insolent language and looking around him to the crew. They all assembled on the quarterdeck and cheered for taking the privateer back to New York. I reasoned the case with them quietly and they retired. James Martin was spokesman with his hands closed in a hostile manner.

The next day 15 May

At 11 A.M., perceived from the masthead a sail. Called all hands and set sail in chase, soon tacked head to the Northward heading for the chase bearing off us about NNE. At meridian perceived from deck the chase to be a very large and lofty field of ice, no doubt more than 150 feet above the surface of the water. Tacked head to the Southeast. Lat. 43.13. Long. 42.52.

In the vicinity of the Azores and Madeira, the *Harpy* was giving chase to a vessel as the account of Thursday, 26 May, opens.

These 24 hours commence with remarks of the last and cloudy weather. At ½ past noon, came up with the chase grapeshot to windward. Took in sail and fired a shot across his bow. He hoisted British ensign, hauled up his main course, steering sails and his wind in a very orderly manner. We gave him several Broadsides and round shot and he not returning it but he still endeavoured to decoy us along side of him by not firing a gun. I called the officers on the quarterdeck and consulted with them, stopped our firing when the officers unanimously agreed she was a brig of war and that he was still decoying of us. We set sail by the wind and fortunately got so far ahead and on his weatherbow that his grapeshot had no effect on us when he opened his broadside which well told what he was. He fired a number of his guns loaded with grapeshot but had no effect, his round went over our main peak, same time split the flying jib head to foot. At 4 P.M. the wind very unsettled and squally, the chase apparently coming up with us. We reefed and tacked head to the Southwestward. ½ Past 4 P.M., the chase tacked for us. At 5 P.M. tacked head to the northward, the sea was so heavy ahead, could not stand on that tack, was afraid of losing masts and bowsprit, the bolts in the knee securing the bowsprit between the knight heads both broke and bowsprit working very much. Gaining nothing ahead from the chase. The wind squally and variable gave us a small advantage of the enemy. At 6 P.M., the enemy steered a little off the wind to the Northeast. We took in sail.

This episode was followed by two ludicrous ones. The first is contained in the happenings of 28 May.

At 4 A.M., a man from the masthead cried out he saw a sail close to the land of Porto Santo. The sailing master went aloft and cried out he saw another distant from the land. Kept away Southeast by East and set sail but soon perceived our mistake to our sorrow. It was two rocks off the end of the island.

The other took place the next day.

At 8 A.M., cried out from the masthead sail bearing off us about west. Set all the light sails we possibly could and steered for the chase. At 11 A.M., perceived our mistake, the chase was a large tower apparently built on a rock about ¼ mile from the North end of the Deserters.

On the 30th, the *Harpy* overhauled a Portuguese brig and while the master was being questioned, Russell, Pellin and Grover of the *Harpy's* crew were found rifling the passengers' clothing which brought on the following complications:

Tuesday, May 31. These 24 hours commence with light airs from the Northeastward, all sails set. At 1 P.M., Frank Pellin's grog was stopped by order of Mr. Jackson, 2nd lieutenant, for bad conduct the preceding day after being brought back from the Portuguese Brig where Mr. Rogers, 1st. lieutenant, stopped him from plundering the cloathes of the passengers and where he went stowed away in the boat without leave from the privateer. Grog being stopped, he made use of very improper language swearing he would be damned if he would work or touch a rope if he did not have his grog. From the mutinous spirit of the crew and I being sensible that the same spirit existed with them, I paid no attention to his expressions but on the contrary walked away from him. At 3 P.M., the 2nd lieutenant observed to the 1st lieutenant his conduct. The 1st lieutenant then said he would have him put in irons with my permission. I told him he deserved it. The lieutenant called him, when he swore he would be damned if he would be put in irons and went forward laughing. I then ordered him instantly to be put in irons when the lieutenant of marines put him in irons on his feet with a sentry over him on the quarterdeck. He then made use of abominable and mutinous language swearing that he did not care a dam about the vessel or anything else. He did not expect to gain anything. I ordered the guard to keep silence when the prisoner shaked his hand to me and told me the follows. 'You be damned, I dont want to talk to you. I dont care a dam about you.' I then told Mr. Rogers his expressions and ordered he should be gagged if he did not keep quiet. He answered me he was in irons and several of the crew cried out on the main deck they would be damned if I would gag him. I, perceiving the disposition of the crew, that it was to resist and certainly would be the means of bloodshed and probably the cause of destroying the cruise, I instantly considered the interest of the owners and all concerned was for me to smother the matter all that was possible and endeavour to bring the crew again in subjection by time and moderate usage. The prisoner remained on the quarterdeck making all the contemptible faces and figures he could think of.

It will be recalled that the *Harpy* sailed from New York 15 April and to date it had not made a capture so 4 June was an auspicious day.

Saturday, June 4. These 24 hours commence with pleasant weather from the Northeastward. At ½ past 2 P.M. perceived a sail [ship *Alfred*] from the masthead bearing off us N.N.E. Set all sail in chase. At 4 P.M. perceived her to be a ship steering off the wind. At 5 P.M., cleared for action, nearing her very fast. At 7 P.M., kept away across his stern and fired a shot along side of him, he still keeping on his course. We fired two shots over his deck when they shewed British colours by spreading it over their quarters and waved his hat. We hove too, boarded him with the small boat and brought on the captain, mate and all the crew with their baggage. At 4 A.M., called all hands to get boats to clear the prize, she being in sand ballast, concluded on destroying her.

Captain Griggs had a change of mind that afternoon for in the journal he wrote:

At 6 P.M., I consulted with my 1st lieutenant and sent writing to my 2nd lieutenant on board the prize, the necessity of sending her to the U. S. Altho of little value it was of importance to us and to the owner's interest of the privateer to get clear of such as we have sent, first of George Russell, prize master, which has most shamefully abused the honour and dignity of the flag he sails under, always intoxicated when in his power to get liquor, complaints being made to me by both lieutenants of his not being capable of keeping his watch for three nights previous to falling in with this ship, besides going on board of neutral vessels without leave and acting in a scandalous manner as complaints were made by the passengers on board the brig to the 1st lieutenant of our crew, plundering their cloathes etc and which was still more serious, he making companions of the crew and making his brags of the mutiny on board the Privateer *Armstrong* wherein he was prize master and telling them how much he approved of the mutiny which crew raised on the commander and took command of the ship and carried her into Wilmington. This seemed to have great weight among the crew and when they came on the quarterdeck on the — day of May in a mutinous manner, John F. Baker was the first man, and the quarter master and followed Russell at this time, seemed much pleased with their conduct. Considering all this and the danger of having them on board, the lieutenant and myself agreed to send her to the U. S. with the following persons, George Russell, prize master, John F. Baker, his mate, Franklin Piller, seaman, and the British captain.

The American privateer had no fear of the British men-of-war. This has never been better illustrated than by the account for

Saturday, June 11. These 24 hours commence with moderate weather from the Northeastward. Carrying all sail we possibly could to get to windward, the current running S.S.W. about 1¾ knots. At 8 P.M., Porto Santo bore off us N.N.W., per compass about six leagues distant. At 5 A.M., got the small bower cable bent to the anchor to anchor in the roads of Porto Santo in order to water. At 6 A.M. perceived a sail coming out of Funchall roads. Called all hands to an early breakfast to be ready to clear away the hold. At 8 A.M., we being near to the roads in light winds

under the land when we all at once perceived the stranger to be steering towards us which put an end to our watering. We made all sail in chase towards him. At 8 A.M., being within one and one-half gun shot, plainly perceived her to be a large ship of war. We tacked from him under the land. He then tacked himself and stood for us under all sail. At 9 A.M. he perceived we would not be decoyed by him, he tacked after us with all the sail he could carry. He being between Porto Santo and Madeira carried with him a fine breeze where we lay nearly becalmed. He neared us fast. At 10 A.M., *we boarded a Portuguese boat and bought some fish.* At noon, the enemy close astern, we under the land within two miles.

During the remainder of June, the *Harpy* was in several encounters and made another seizure while progressing Northward from Madeira. On 3 July off the coast of France, the privateer was in pursuit of the British Post Office packet *Princess Elizabeth.*

At 4 P.M., perceived her bearing off us Northwest in the same tack. At 6 P.M. she tacked head Eastward. We also tacked head to the Eastward to gain a windward position. We again tacked head to the Westward. At ½ past 7 P.M., he hoisted English colours and fired a gun to leeward, we then on his lee quarter. At ¾ past 7 P.M., we tacked head to the Eastward. At 50 minutes past 7 P.M. commenced firing round shot after he fired several shots at us. He carried all sail, we could scarcely gain to windward so as to near him. At ½ past nine, the action was kept up on both sides with grape and cannister shot and double headers. At 11, precisely after three warm hours with grape, canister and musketing the enemy hoisted a light, then hailed us that he had struck. We put out the boat, sent the 1st lieutenant on board with some men to put the ship in order. Brought on board her crew and some passengers and three boxes containing $10,000 in specie. We were all cut to pieces in rigging and sails, one jib stay 3 shrouds, a nine pound shot through the center of the fore mast in wake of the gaff, another nine pound shot through the center of the main mast, shot holes in the mainsail, foresail, topsail, the jib and the flying jib. Shot away the fore topsail yard. Michael Hughes, ordinary seaman killed with a ball in his shoulder which penetrated into his breast. The ship was much injured in her spars, her sails cut to pieces, shot away his crosset [crosjack?] arm, tore up her bulwarks very much, two men wounded in the legs and the sailing master's arm broken.

The next day

At 10 A.M., I called all the officers and crew on the quarterdeck and reasoned the case with them, telling them we would have to be on small allowances of water and provisions when the officers agreed in general the prize ought to be sent off with the prisoners, being then about 40 in number, when Sam Grover and the boatswain's mate, then drunk, swore they would not work or do the privateer's duty if she (the prize) was not sent to the U. S., same time they did not see the use of going on short allowance, they had no notion of such. Such was their conduct, they excited others to do the same. The vessel then being a wreck in her rigging and sails, masts and bowsprits, I consulted the officers on the occasion and we concluded to send her to the U. S., two-thirds of the crew at this time being intoxicated and how no officer could tell. At 8 P.M., all our crew that were sober were dancing with musick.

Captain Griggs was now homeward bound in a vessel much in need of new sails and rigging and major hull repairs. On 7 July

At 4 P.M. found in Joseph Pool's bag brought from the prize one basket raisins and some new canvas out of a new sail. I gave him the raisins and ordered him to give up the canvas. He swore hard at this, went forward and excited great disturbance among the crew swearing he would be damned if he would ever fire another gun under my command and that I might fight and be damned for the next prize. I ordered him instantly be quiet or I would have him confined when he answered me 'Confine and be damned' I ordered him to be put hands in irons below deck. In going down he threatened me hard and as loud as he could he would be damned if he did not put irons around my neck and he hoped we should fall in with the sloop of war tomorrow and see who would fight.

The next day they did fall in with the *Saint Lawrence*, not a sloop-of-war but a vessel with a rich cargo of fish, cod liver oil, etc., which was manned and ordered to the United States. The following Saturday happened another case of theft with a peculiar twist.

At 7 P.M., a charge of theft was made against Joseph Mitts for cutting open the bag of Dennis Thomas, seaman, have stolen from it several articles and tobacco which was proved by Isaac Stricker who lay in his hammock over his bag. Mitts declared that Stricker was also concerned in said theft which was soon proved by finding the property on him. Each received one dozen lashes on the bare bottom at the gun with the cat-nine tails publickly.

So after a cruise of one hundred and sixteen days, the privateer *Harpy* of Baltimore sailed into the harbor of Portsmouth, New Hampshire, with five prisoners on 10 August 1814.

The records at the Portsmouth Custom House show that the master and crew were discharged and the *Harpy* stayed in port until October. On 1 October 1814, the vessel was recommissioned at Portsmouth and set sail immediately with William Nichols as master. On 10 October, she captured the ship *Amazon*, on 15 October the schooner *Britannia*, the next day the ship *Bridges* and the day following the brig *Halifax Packet*. She arrived at Portsmouth the 27 October with forty-nine prisoners including Henry Dun, staff surgeon of the British Army with rank of major, his servant, John Hogg who was an ensign in the British Army, and a soldier, all from the *Bridges*.

Columbus and Polaris

PART II

BY SAMUEL ELIOT MORISON

Commodore, Harvard Columbus Expedition, 1939-1940

IT was certainly a rash promise of Columbus, in the preamble to the Journal of his First Voyage, to provide latitude and longitude for every place that he discovered. Nobody in his day was able to ascertain longitude, and he obviously was incapable of finding the correct latitude. The want of these data in his Journal disappointed the Sovereigns, who wrote to him before sailing on his Second Voyage to send them the promised positions, and pointedly suggested that he ship a competent astronomer, such as Fray Antonio de Marchena.[49] He did not take the hint, and the Second Voyage, beginning at Cadiz in September 1493, was carried through with no other navigating officer than the Admiral himself. His competent landfall at Dominica, and his steering thence for Hispaniola 'in as straight a track as if by a well-known and frequented route,'[50] proves that he relied on his excellent dead reckoning rather than on celestial navigation to find his way west.

The observations of the Guards that he made in the course of his Second Voyage, either at Isabella in April 1494 or at Guadeloupe in April 1496 we have already quoted. But there must have been others. Indeed, one remark about the Second Voyage made in Columbus's *Lettera Rarissima* of 1504 suggests that he was familiar with the principle of middle latitude sailing. The Spanish (which in general has been wretchedly translated) is as follows:

> lo que io sé es que el año de .94. navegué en .24. grados al poniente en término de .9. horas; i no pudar aver ierro, porque uvo eclipses; el sol estava en Libra, i la luna en Ariete.

> What I do know is that in the year '94 I sailed on [the parallel of] 24° to the West a limit of 9 hours [of longitude, or 135°]; and I can't be wrong because there was an eclipse; the sun was in Libra and the moon in Aries.[51]

[49] Navarrete, *Colección de Viages,* II, 109-10 (núm. lxxi).

[50] S. E. Morison, *Second Voyage of Columbus* (Oxford. Clarendon Press, 1939), p. 34.

[51] Cecil Jane, op. cit., II, 83. His translation on p. 82 is misleading, as in Thacher's (II, 687); yet Von Humboldt had shown the correct meaning in his *Kritische Untersuchungen* (Berlin, 1852), I, 553, as did E. G. Bourne in *Northmen, Columbus and Cabot* (New York, 1906), p. 396, note.

The longitude calculation was, of course, completely wrong; it is the statement that he sailed his Second Voyage on the twenty-fourth parallel of latitude that interests us here. Columbus took his departure that voyage from Gomera, on about latitude 28° N. His furthest south was the south coast of Jamaica, a little under latitude 18° N. The average, or middle latitude, which any seamen of today would use to calculate distance, was therefore 23°—a mistake of only one degree. This calculation must certainly have been based in part on observations of Polaris for latitude.

THE OBSERVATIONS ON THE THIRD VOYAGE

It was on his Third Voyage that Columbus made the most interesting observations of Polaris that have come down to us, observations upon which I have been unable to find any intelligent comment by secondary writers.[52] No Journal is extant of this Voyage; but Ferdinand Columbus quoted freely from the original in the Life of his father,[53] and Las Casas made an abstract of it for his *Historia de las Indias*.[54] Columbus himself wrote a letter to his Sovereigns about this Voyage, and dispatched it from Hispaniola in October 1498.[55] These three sources, supplementing one another, provide us with four separate sets of Polaris observations between 13 July and 16 August 1498.

At the beginning of this Voyage the Admiral had six ships under his command, but three of them were ordered directly to Hispaniola from Gomera in the Canaries, and given the correct courses for the route followed by Columbus on the Second Voyage. The Admiral with the other three vessels called at Boavista and São Tiago in the Cape Verde Islands, and took his departure from Fogo on a SW course on 4 July 1498. It was his purpose to discover a southern continent, the existence of which was suspected by D. João II, King of Portugal.

After sailing 120 leagues SW from Fogo, the fleet found itself becalmed on 13 July, and drifted in the doldrums until the twenty-second.

[52] Even the great Von Humboldt, in his *Voyage aux régions équinoxiales du Nouveau Continent* (Paris, 1814), I, 506-07, made an analysis of these observations that makes no sense, because he supposed that Columbus's Guards belonged to Ursa Major.

[53] *Le Historie della vita e dei fatti di Christoforo Colombo*, chs. 65-67. Of this work there is no better text than the Italian translation by Ulloa (Venice, 1571) from the lost Spanish original. I have used the Rinaldo Caddeo edition (Milan, 1930).

[54] Lib. i, chs. 130-38, 146-47 (1927 ed., I, 514-43, 570-76). But the best MS. of this part of the *Historia*, with more material from the Journal, and fewer interpolations by Las Casas, is printed in *Raccolta Colombiana*, I, ii, 1-25; and this is what I have used. More or less faulty translations of it will be found in J. Boyd Thacher, *Christopher Columbus* (1903), II, 374-408, and E. G. Bourne, *Northmen, Columbus and Cabot*, pp. 319-66.

[55] The best text of this is in *Raccolta*, I, ii. 26-40. Cecil Jane has a not impeccable text (17 words dropped out on p. 19, l. 1) with a fair translation, in *Documents Illustrating the Four Voyages of Columbus*, II (Hakluyt Soc., 2d ser., LXX), 2-47.

It was here that the Admiral broke out the old wooden quadrant and began drawing a bead on Polaris. According to the Las Casas abstract, on 31 July, 'at nightfall he took the altitude and found that the North Star was in five degrees.'[56] So, too, Ferdinand: 'he found himself a distance of 5° from the Equator.'[57] As we shall see, Columbus had several reasons for believing that he was in 5° North latitude, when he was actually twice that distance from the Equator.

On 14 July, according to the Las Casas abstract, 'estando las guardas en el braço izquierdo, dize que tenía el norte en siete grados'—'the Guards being on the left arm, he says that the North [Star] had 7° [altitude].'[58] This does not agree with the more detailed account in Ferdinand, and I suspect that Columbus 'threw it out.'

Ferdinand, summarizing the Journal, first describes the Second Voyage observations that we have already studied, and proceeds:

> In this place where he found himself, in the torrid zone, it happened quite the contrary; for when the Guards stood at the Head, he found that the pole [star] was elevated 6°; and when the Guards passed the Left Arm at the end of the 6th hour, he found the North Star 11° high; and in the morning, when the Guards were touching the Feet, although they could not be seen because of the lowness of the Pole, the North Star was elevated 16°,[59] so that the difference was 10° and it described a circle whose diameter was 10; whereas in that other place it made but 5 in lowering its position, and there it was lowest on the Left [*sic*] Arm and here on the Head.[60]

Except for the statement that the Guards then moved from Head to Feet during the night hours,[61] these observations were inaccurate. Columbus found a polar distance of 5° instead of 3° 40′, and the positions of the Guards relative to the altitude of Polaris were incorrect. The lower transit of Polaris in Columbus's day came when the Guards were about on East Shoulder, and the upper transit when they were approximately at Line under West Arm. Yet the observations were sufficient to determine latitude.

Exactly where was Columbus when he made these observations of Polaris? He had taken his departure on 4 or 5 July from São Tiago, Cape Verde Islands, lay almost becalmed for a day or two, and only dropped

[56] 'Anocheciendo, tomó el altura, y halló que el estrella del norte estaba en cinco grados.' *Raccolta*, I, ii, 6, l. 14; Las Casas, *Historia de las Indias*, lib. i, ch. 131 (1927 ed., I, 518).

[57] *Historie*, ch. 66; Caddeo ed., II, 81.

[58] *Raccolta*, I, ii, 7, l. 3.

[59] The Italian text has VI, an obvious misprint for XVI, as the next clause shows.

[60] *Historie*, ch. 66; Caddeo ed., II, 82, with a quotation from Dr. Magnaghi's article in the footnote.

[61] Tested by the Hayden Planetarium.

Fogo, the high volcanic island 30 miles west of São Tiago, on the seventh.[62] The course was SW. This took him, according to Van Bemmelen's chart of agonic lines in 1500, along the line of 3° easterly variation of the compass.[63] That would mean a course of 222° true. Ferdinand and Las Casas, both using the Admiral's lost Journal, report that the distance run on this course to 13 July, when the wind dropped, was 120 leagues, or 381 nautical miles. Las Casas remarked that this was too little; 120 must have been a mistake for 200 leagues (636 nautical miles).[64] It is true that a run of 381 miles in seven or eight days is a very poor showing. It would have meant an average speed of about 2 knots, and Columbus's ships usually did much better than that in the trades. He averaged about 3.8 knots for the 33 days' outward passage September-October 1492,[65] and over 5 knots for the outward passage on the Second Voyage in October-November 1493.[66] But the trades may have been very light in July 1498, as often they are in midsummer and even at other times. Columbus was generally correct in his dead reckoning, and when he did make a mistake in distance run, it was almost always an overestimate. The only reason Las Casas had to stretch out 120 leagues to 200 was his supposed necessity to get his hero by 13 July down to latitude 5° N, where Columbus supposed that he was. As we shall see, there was no need to make this correction, because (to anticipate a little) Columbus believed that the latitude of Fogo was about 9° N, whereas the correct latitude is 14° 52′ N. Consequently, starting with a 6° error in his dead reckoning, he naturally supposed himself to be about 6° further south on 13 July than he actually was.

A course of 222° true for 381 miles from Fogo,[67] plus the aid of nine or ten miles a day from the equatorial current, would have taken the fleet to latitude 10° N, longitude 28° 39′ W, more or less. That, I believe, is the approximate position where Columbus actually was becalmed, and where he observed Polaris. And we reach this same position if we work back from Trinidad. Columbus's course from the doldrums to Trinidad

[62] *Historie*, ch. 66; Caddeo ed., II, 80.

[63] W. Van Bemmelen, 'Die Abweichung der Magnetsnadel,' Supplement to *Observations of Royal Magnetical and Meteorological Observatory of Batavia*, XXI (Batavia, 1899).

[64] *Historia de las Indias*, lib. i, ch. 132 (1927 ed., I, 518). Las Casas assumes this error because he supposed Columbus had reached lat. 5° N, as Columbus himself supposed.

[65] Study by Captain J. W. McElroy.

[66] S. E. Morison, *Second Voyage of Columbus*, p. 32.

[67] Fogo is 9760 feet high and visible as much as 100 nautical miles away. Presumably Columbus took his departure from the nearest point of it as he sailed by, which is the normal and seamanlike procedure. We could get the fleet further south than 10° N by starting Columbus's distance run at a point 75 to 100 miles from Fogo, but no seaman would wait until his final glimpse of an island to take a departure and start his dead reckoning.

was *hazia poniente* 'towards the west,'[68] and the SE point of Trinidad which he first sighted, lies just above the parallel of 10° North latitude.[69] It is possible that he reached latitude 9° S before being becalmed, and that later the equatorial current set him sufficiently northerly to make Trinidad on a W course. But we have a week's southwesterly drift for that current to compensate, and latitude 10° S is near enough. It is only one degree out from the results of his Polaris observations on 14 July.

It is doubtful whether Columbus, with the means at his disposal, could have made any observations of Polaris south of latitude 10° N. I found great difficulty when sailing from the Canaries to Trinidad during winter months which are ordinarily much clearer than July, in observing Polaris south of that parallel. The trade-wind clouds fly low, in an endless succession, blocking off the stars up to as much as 15° above the horizon; and when clouds are few there is apt to be haze. Even on latitude 15° N one could usually pick up the Guards only with the aid of a marine glass; Kochab, the Principal Guard, disappeared altogether after wheeling below West Arm. And by the time we had sailed below latitude 11° N—for we were following approximately the route of the Third Voyage—Polaris was not much good for latitude even when the sky was fairly clear. For instance, at 8 P.M. ship's time 9 December 1939, G.M.T. 23 h. 15 m., our D.R. position being latitude 10° 40′ N, longitude 54° W, good horizon and clear sky, the Guards were invisible, although δ and ε Ursae Minoris, visible with a glass, indicated that they were between Line below West Arm and Feet. My sextant observation of Polaris gave an altitude of 11° 33′. This turned out to be 17′ too little. The two following nights, with latitude between 9° and 10° N, I did better; but on neither night were any stars of Ursa Minor visible except Polaris. One of the navigators on our *Capitana*, a man of wide experience in most parts of the world, told me that he had never known Polaris to be seen at a lower latitude than 6° North, where owing to horizon haze and refraction no accurate observation of it would be possible. The Portuguese found this out before the end of the fifteenth century, and began working out a *Regimento* for the Southern Cross as a far more accurate guide than the low-hanging *Estrella do Norte*.

The position I have assumed for Columbus on 13 July, latitude 10° N, longitude 28° 39′W, is well within the doldrums, the belt of calms be-

[68] *Raccolta*, I, ii, 7, l. 17.

[69] According to Van Bemmelen's chart, the fleet in sailing west from latitude 10° N, longitude 29° W would have left the line of 3° easterly variation and passed rather quickly into that of no variation. His magnetic course then would have varied no more than 1° southerly from 270° true or due west.

tween the southern limit of the NE trades and the northern limit of the SE trades. The United States Hydrographic Office Pilot chart of the North Atlantic for July reports calms and variable winds for twenty-four per cent of the time in that area, a percentage surpassed in the entire Atlantic Ocean only in two squares to the westward. And if the fleet had sailed much further, it would have been caught by a current setting easterly.

Columbus certainly believed that he was in the latitude of 'the Sierra of Loa' and of the 'Cape of Sancta Ana in Guinea,'[70] and if our estimate of his position is correct, he was not far wrong. The country that the Portuguese named Serra Lyoa, and for which we use the Spanish form Sierra Leone, extended from about 7° to 10° North; the latitude of Cape St. Ann is 7° 34′ N, and that of the Los Islands is 9° 30′ N.[71] It was the Admiral's object on this voyage to sail along the latitude of Sierra Leone until he struck land which, by Aristotle's doctrine of parallel zones, should prove to be rich in gold and spices. Yet the mere fact of Columbus being so nearly right, as to his parallel being that of Sierra Leone, helped to put him very wrong as to his latitude in mid-Atlantic!

This curious paradox is thus explained. Columbus had been deeply impressed by a solar observation for latitude made in 1485 at the Los Islands in Sierra Leone by Master Josephus Vizinho, a Jewish astronomer and physician sent to the West Coast for that purpose by D. João II. The Admiral—or possibly his brother the Adelantado—recorded in the margin of their copy of the *Historia Rerum Ubique Gestarum* by Pope Pius II,

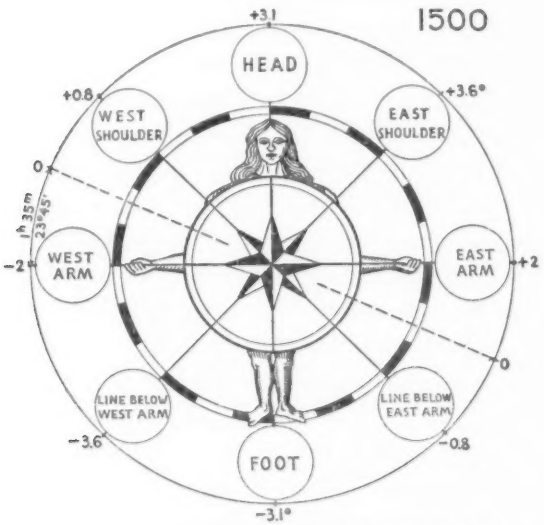
> The King of Portugal sent to Guinea A.D. 1485 Master Josephus his physician and astrologer to take the altitude of the sun in the whole of Guinea, and he . . . reported to the said king *in my presence* . . . that he found himself on 11 March to be distant from the equator five degrees and some minutes on the island called *Los Ydolos* which is off Sierra Leone, and he procured this with the greatest care. Later . . . the same king sent [other observers] to other places in Guinea, but he always found them to agree with the same Master Josephus, wherefore I hold for certain that the Castle of the Mine is below the equator.[72]

[70] *Raccolta*, I, ii, 6, l. 1; Letter to Sovereigns in Cecil Jane, op. cit., II, 12-13, 32.

[71] Cf. Duarte Pacheco Pereira, *Esmeraldo de Situ Orbis* (Kimble ed., Hakluyt Soc., 2d ser., LXXIX), pp. 96-106.

[72] My translation of postilla no. 860, which is conveniently printed with French translation in Edmond Buron, *Ymago Mundi de Pierre d'Ailly* (Paris, 1930), III, 751. Columbus's statement on the latitude reads 'g. V. minute.' I have verified the original in the Colombina at Seville and agree with Prof. Magnaghi (op. cit., p. 467) that it means '5 degrees (gradus) and some minutes,' and that Mr. Nunn is wrong in translating it 'one degree and five minutes' (*Geographical Conceptions of Columbus*, p. 7). There is really no room for argument, because the 5° reading is confirmed by a passage in Columbus's Letter to the Sovereigns on the Third Voyage (Cecil Jane, op. cit., II, 33): 'en manera que alli en derecho, donde yo estava, qu' es la sierra Leoa, adonde se me alçava la estrella del norte, en anocheçiendo, çinco grados, allí es la gente negra en estrema cantidad, y, . . . quando yo llegué á la isla de la Trinidad, adonde la estrella del norte, en anocheciendo, también se me

Naturally a latitude from meridional observation of the sun—a method Columbus had not the art to employ—by so eminent a mathematician as Master Josephus and so notably confirmed, made a deep impression on the Admiral. That Sierra Leone lay athwart 5° North latitude was a fixed point in his geography. His dead reckoning told him he was on that parallel. So, if Polaris did not agree, so much the worse for Polaris!



Corrections to observed altitudes of Polaris at different positions of Kochab to find latitude of observer

Now let us return to the Polaris observations. Columbus, as we have seen, found Polaris to be 6° above the horizon when the Guards were at Head, 11° when on West Arm, and 16° when at Feet, on 14 July and the days following. Having already noted the diurnal rotation of Polaris on his First Voyage, and knowing that the altitude of the Celestial Pole was the latitude of the observer, he should have concluded from this observation that his latitude was the mean between the extreme positions, and therefore 11° North. Or, if he had made the proper corrections to the Head and West Arm altitudes, respectively +3.1° and −2°, the latitude would clearly have been 9° N,[73] but he did not know the proper corrections to apply.

alçava çinco grados.' In other words he believed that the latitude of Sierra Leone was 5° N. The actual latitude of the Los Islands is 9° 30′ N, and that of The Mine (São Jorge da Mina, the modern Cape Coast Castle) is 5° 06′ N. Consequently Columbus's estimate of the difference of latitude between these two places was not far wrong.

[73] Consult table above, THE AMERICAN NEPTUNE, I (1941), 16.

In mid-July 1498, according to the Hayden Planetarium, the Guards were at Head about 7 P.M., the earliest possible hour to have observed them. Columbus reported the Guards to be at West Arm six hours later, which would carry us to 1 A.M.; and at Feet when dawn broke. But dawn broke much earlier than 7 A.M. on 13 July; at 10° N latitude probably Polaris could not have been seen after 5.30. This explains why the Admiral's dawn observations were so faulty. He himself admits that the Guards could not be sighted at daybreak—they had disappeared under the horizon. Polaris is a faint star in low latitudes, where she has an inconvenient habit of popping behind a cloud or haze just when you need her. There must have been a good deal of guesswork in Columbus's dawn sights of Polaris on 14 July. The 'old man' lost track of the North Star after midnight, just as this 'old man' did on several occasions when attempting to check up on him at sea, 441 years later.

We are now in a position to see that the Admiral's mid-July observations of 1498 were not quite so bad as they first seemed, given the circumstances of low latitude and a doldrum haze. At nightfall, around 7 P.M., when the Guards pointed to the Head, the altitude of Polaris was 6° (according to Ferdinand Columbus). Apply the correction of +3.1° for that position and you have latitude a trifle over 9° N, one degree south of where we believe that the fleet actually was. When the Guards reached West Arm about six hours later, the altitude of Polaris found by Columbus was 11°. Apply the proper correction of −2° and you again have latitude 9°. It was only when the Guards were supposed to be at the Feet position at dawn, when he admits that they could not be seen, that the Admiral made his greatest error. The correct altitude was around 13° if the latitude was 10° N, or 12° if the latitude was 9° N. Or, if he observed Polaris at upper transit, when the Guards if visible would have been at Line under West Arm, an altitude of 14° would have been nearly correct. If the other two observations were correct, as they seem to have been, an altitude of 16° would have been impossible at any hour of the night.

Accordingly, the evening and 'midnight' observations of 6° and 11° respectively were correct within a degree, but the 'dawn' observation, even if taken when the then invisible Guards were at Line under West Arm, was over 2° out. It was this third observation that put the Admiral off, and led him to suppose that the polar distance of the North Star Polaris had suddenly increased from 2.5° 'in the Azores' to 5°. And this faulty polar distance in turn was used to sustain his amazing cosmographical theory, which has been the butt of everyone from Peter Martyr to

Madariaga, that the fleet was passing over a sort of breast or nipple on the surface of the globe. Of course, even if there had been such an excrescence, the observed polar distance would have remained constant.

On 22 July, after being eight days becalmed in the doldrums, the fleet filled away on a westerly course, the Admiral intending to follow the supposed parallel of Sierra Leone until he struck land. In the meantime he must have been drifting SW with the equatorial current at a speed of 10 to 40 miles a day.[74] So that probably he had reached latitude 9° N by the time the wind returned. According to Van Bemmelen's chart, a westerly course from that point would have taken him through the agonic lines of 2° and 1° easterly variation to the region of no variation; consequently his true course varied little if anything from 270°.

As he sailed along, the Admiral made repeated observations of the North Star, and these are reported in his Letter to the Sovereigns:

> fallé allí que, en anocheçiendo, tenía yo la estrella del norte alta çinco grados, y estonçes las guardas estavanençima de la cabeça, y después, á la media noche, fallava la estrella alta diez grados, y, en amaneçiendo, que las guardas estavan en los pies quinze. . . . en esto de la estrella del norte tomé grande admiración; y por esto muchas noches con mucha diligençia tornava yo á repricar la vista d'ella con el quadrante; y siempre fallé que caýa el plomo y hilo á un punto.[75]
>
> I found that at nightfall I took the North Star 5° high, and then the Guards stood above the Head, and later at midnight, the Star was 10° high, and at daybreak when the Guards were at the Feet, 15°. . . . In this matter of the North Star I felt great wonder, and accordingly for many nights with much care I repeated the observations of her with the quadrant; and I always found that the thread and plummet fell to the same point.

Allowing for an additional reason for error because they were made from a live ship instead of as before in a flat calm, these observations were even better than those of 13-14 July. The proper corrections applied to the nightfall and midnight altitudes give latitude 8° N. The correct latitude must have been between 9° and 9° 30′ N. Again, the dawn observation is curiously inaccurate.

The fleet followed a westerly course for nine days from 22 July. After reaching longitude 45° W, the equatorial current would have begun setting it to the northwestward and consequently brought it up to latitude 10° again. On 31 July, when in about longitude 60° 40′ W, the Admiral altered course to N by E for the Caribbee Islands. That same day at noon a sailor sighted the Trinity Hills of southern Trinidad from the crow's nest.

[74] Boyle T. Somerville, *Ocean Passages for the World* (1933 ed.), p. 59.

[75] *Raccolta*, I, ii., 34-35.

Columbus then steered for them and entered the gulf between Trinidad and Venezuela that leads to the Boca del Sierpe. There, he writes to the Sovereigns, 'the North Star at nightfall also rose 5°.'[76] The correct altitude would have been about 8.5° at 7 P.M. And again, in the Boca del Sierpe, 'I found that at nightfall I had the North Star at nearly 5° altitude and in the other *Boca* to the northward which I called *del Drago*, it was nearly 7°.'[77] That these figures were meant to be latitudes and not mere altitudes was understood by Las Casas, who says that the Admiral placed his course from the doldrums to the Boca del Sierpe along latitude 5° North,[78] and in another place quotes him as saying, 'It is a marvelous thing that the Sovereigns of Castile should have lands so near the equator as 6°.'[79]

It is clear then that Columbus believed that he had reached latitude 5° N on 13 July, and that from the doldrums to Trinidad he had been sailing on that parallel, which he supposed to be also the latitude of Sierra Leone, 'the same parallel whence the King of Portugal brought gold.'[80] Why this delusion, despite the 6-11-16 and 5-10-15 observations of the altitude of Polaris, from which he should have deduced a latitude somewhat between 8° and 11° N? Because, for one thing, he still believed that the Head position of the Guards (where they were at 6 P.M. in mid-July, and 7 P.M. at the end of July) indicated that Polaris then had the same altitude as the Pole; consequently a nightfall observation of Polaris gave latitude with little or no correction. Secondly, he firmly believed in the erroneous latitude of 5° N that Master Josephus assigned to the Los Islands in 1485.[81] Third, if Jaime Ferrer quotes him correctly,[82] Columbus believed in 1494 that the latitude of the Cape Verde Islands was 9° 15′, instead of 15° more or less, depending on the island. He was unable to take observations at Boavista or São Tiago, the Cape Verde Islands visited on his Third Voyage, because of the haze, and consequently had no reason to alter his opinion. He probably made about five degrees southing, as we have seen, between 4 July (São Tiago) and 13 July (doldrums). If he still calculated the latitude of the northern Cape Verde Islands to be 9° 15′, his position on 13 July would have been

[76] *Raccolta*, I, ii, 36, l. 9.

[77] Id., p. 37, ll. 2-4.

[78] *Historia de las Indias*, lib. i, ch. 141 (1927 ed., I, 552).

[79] *Raccolta*, I, ii, 9, l. 3.

[80] Id., p. 8, ll. 30-31.

[81] This is the opinion of Dr. Magnaghi (*Boll. soc. Geogr. Ital.*, 6 ser., V, 487-88) quoted in Ferdinand's *Historie*, Caddeo ed., II, 84 n. See above, p. 00.

[82] Thacher, *Columbus*, II, 195, 198-99.

around latitude 5° N, and on that parallel he had continued, so he supposed, to Trinidad.

The above-mentioned 7° observation of Polaris's altitude at the Boca del Drago is also interesting, and better than those in the Boca del Sierpe, although the deduction of 7° North latitude from it was inadmissible. Columbus arrived at the northern Bocas on the fifth and again on the thirteenth of August, when the Guards at 7 P.M. were at West Shoulder. The proper correction for that position would have been +0.8°, making latitude nearly 8° N. The correct latitude of the Boca del Drago is 10° 40′. Consequently the correct altitude of Polaris at 7 P.M. 13 August would have been around 9° 50′.

Yet here, as before, Columbus did not draw the proper conclusion from his own observations. It was another instance of the curious dualism in his nature; a scientific capacity to observe, fighting against a scholastic habit of mind which squeezed all observed phenomena into preconceived ideas. Polaris was on the Pole when the Guards were at the Head; he was on the parallel of Sierra Leone; the latitude of Sierra Leone was 5°—didn't the great Master Josephus say so?—*ergo*, Polaris must show that Columbus was sailing along 5° North latitude from the doldrums to Trinidad.

Another of his erroneous beliefs, that the geographical degree equaled 56⅔ Roman miles, or 14 leagues, remained unshaken. Hence, immediately after reckoning the distance between the two Trinidad *Bocas* as 15 leagues—the correct distance being only 11.6 leagues—he revised it upward to 26 leagues; 'And I cannot err in this, because they were measured with a quadrant.'[83] His reasoning is clear. Assuming that the latitude of Boca del Sierpe was not quite 5° N and that the latitude of Boca del Drago fell a little more short of 7°, the difference, by the Colombian degree, was 104 Roman miles, or 26 leagues! Yet Columbus had sailed over the course, and ordinarily, when not trying to prove something, he made sound estimates of distance.

Columbus's last recorded Polaris observation on this voyage was made at nightfall on 15 or 16 August 1498, when he was sailing on a NW by N course from the island of Margarita off the Venezuelan coast, for Hispaniola. There he says,

> halló también allí, donde agora venía, que la estrella del norte tenía en .14. grados quando las guardas habían pasado de la cabeça el término de dos horas y media.
>
> he also found, where he now came, that the North Star rose 14° when the Guards had passed the Head two hours and a half.[84]

[83] *Raccolta*, I, ii, 36, l. 38.

[84] *Raccolta*, I, ii, 24, ll. 15-16. It is not clear from the context at which of the two dates this observation was made.

According to the 1509 *Regimento* the Guards in mid-August were 30° under West Arm at midnight. Therefore they would have been half an hour or 7.5° above West Shoulder at 6.30 P.M., a little early to have observed them. The proper correction for that position is about +1°, giving a latitude of 15° N. According to my plotting of the dead reckoning, the fleet had reached about latitude 12° N at sundown 15 August, and a degree higher one day later. The error was 2° or 3°, depending on the day.

Columbus was not trying to prove anything in this part of the Caribbean. Fortunately for science, he had broken loose from the 'parallel of Sierra Leone' and the authority of Master Josephus. And this last observation does him credit because it was made at sea, and not from the land or the deck of a ship at anchor.

FOURTH VOYAGE AND CONCLUSION

In the contemporary accounts of Columbus's Fourth Voyage (1502-1504), there are no references to celestial observations in the writings of Columbus or of his son, who went on the voyage, until it was almost over. Pedro de Ledesma, one of the pilots, deposed in the inquest of 1513 that they found the latitude of Las Barbas (the Archipelago de las Mulatas on the Panama coast) to be 13° 30′. The correct latitude is between 9° 20′ and 9° 40′.[85]

On 29 February 1504, when marooned at St. Ann's Bay, Jamaica, Columbus observed a lunar eclipse and made a very feeble attempt to find his longitude. Near the conclusion of the record in his 'Book of Prophecies' he says,

> En el poerto de Santa Gloria in Janahica se alça el polo diez & ocho grados, estando las Guardas en el braço.[86]
>
> In the Harbor of Santa Gloria in Jamaica the altitude of the Pole was 18° when the Guards were on the Arm.

By *polo* did Columbus mean Polaris or the Celestial Pole? His son uses the word in both senses; one can generally tell what is meant by the context. Here, I believe that the Admiral meant the Celestial Pole, despite his mention of the Guards. Of course the altitude of the Celestial Pole is the same, whatever position the Guards assume; but at that time, when Polaris was the same height as the Pole, the Guards were very close to the Arms. Kochab passed East Arm about 9 P.M. 29 February 1504, just after

[85] *Documentos Inéditos*, 2d ser., VII, 265.

[86] *Raccolta*, I, ii, 142, ll. 7-8.

Columbus had completed his observation of the lunar eclipse; and that, I suggest, is why the position of the Guards was included in his latitude observation. If, as I believe, Columbus concluded that the altitude of the Pole, and therefore the latitude of his position, was 18°, it shows that he had made considerable progress in Polaris observations. For the actual latitude of the place where his ships were stranded was 18° 26′ 45″. He spent a year there, to be sure, and had ample opportunity to make repeated observations with his quadrant from a firm base; but I rather think that this report of latitude was made from a single observation on 29 February 1504.[87]

Columbus's success as a navigator depended on his careful dead reckoning; not on his celestial observations. These last were not the best of his era, but were probably much better than the average, and far from contemptible. *El Arte de Navegar* developed very quickly after 1492, with the increasing number of long voyages to America and the Far East. Columbus himself predicted in 1502 that 'through the perfection of instruments and the equipment of ships,' navigation to the Indies would become progressively safer and speedier.[88] As an index of how rapidly navigational technique improved, Amerigo Vespucci on his First Voyage, with Ojeda in 1499, reported the coast of Venezuela, which stops short of latitude 12° N, to be in 23° N.[89] But on his Second Voyage, with Diego de Lepe in 1500, he reported Cape St. Augustine, Brazil, to be in 8° S, which is within half a degree of the correct latitude.[90] This result was probably obtained from a sun sight, as certainly was that of Master João, the Jewish physician-astronomer in the fleet of Pedro Álvares Cabral, who, in April 1500, found the latitude of Porto Seguro, Brazil, to be 17° S; its actual latitude is 16° 21′ S.[91]

Admittedly Master João and Vespucci were better observers than Columbus, but if we compare the great Admiral's latitudes with those of the early maps of the New World, we shall not find him to be among the worst. The Juan de la Cosa chart of 1500, for instance, gives Trinidad a latitude of 14° N (really 10°), Guadeloupe 21° (really 16°), northern Cuba 36° (really 23°), and San Salvador 35° (really 24°). Even Columbus, when he said that his first landfall was on the same latitude as Ferro (27°), was not so inaccurate as Juan de la Cosa, who became an eminent

[87] Juan López de Velasco gives latitude 18° for this place, the approximate site of the Sevilla Nueva, in his *Geografía y descripción universal de las Indias* (1571-74), 1894 ed., p. 120.

[88] *Raccolta*, I, ii, 163, l. 28; J. B. Thacher, *Columbus*, III, 241.

[89] G. T. Northrup, ed., *Vespucci Reprints*, IV, p. 18 of translation.

[90] Id., p. 37.

[91] W. B. Greenlee, ed., *Voyage of Pedro Álvares Cabral* (Hakluyt Society, 2d ser., LXXXI), p. 36.

navigator and cartographer. We must also remember that we have far more information about Columbus's observations than about those of any of his contemporaries, or of anyone earlier than João de Castro. Columbus 'gave himself away' completely in his writings. We know his errors and foolish theories, as well as his successes and triumphs. By any proper canon of historical interpretation, we lack the information to make a fair comparison between him and his contemporaries or rivals as a celestial navigator.

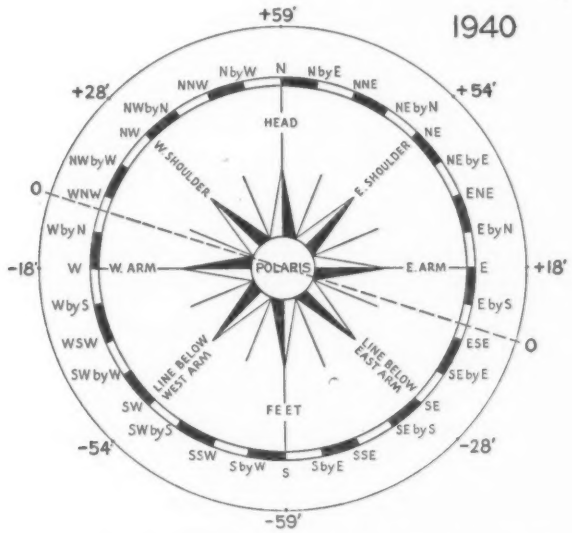
His values given to various positions of the Guards, faulty by 2° or 3°, are excusable considering the low latitudes from which he observed them. The polar distance of 5° that he assigned to Polaris, while less accurate than that of the 1509 *Regimento* (3° 30′) was not much worse than that of the famous Portuguese mathematician Nonnius (Pedro Nunes) who, writing in 1537, and quoting the authority of the celebrated Nuremburg astronomer Johannes Werner, said that the polar distance of Polaris was between 4° 09′ and 4° 10′.[92] And if he made no such accurate determinations of latitude as did Vespucci and Master João, his average may well have been as good or better than theirs; for of Master João we know his one brilliant sight, and Vespucci was not one to tell the world of his mistakes and failures.

Columbus's real merit as a navigator was his ability to find his way by dead reckoning.[93] When sailing for a place already known, he always managed to hit it on the nose; for examples, note his return passage in 1493, the landfall on the Second Voyage, the return passage of the Second Voyage, the leg of the Third Voyage from Margarita to Hispaniola (imagine the amount of dead reckoning to close the last gap of a circuit that took in Hispaniola, the Azores, Spain, the Canaries, Cape Verdes, Trinidad and Margarita); the outward passage in 1502, and the directions given to the Hispaniola fleet in 1498. Celestial navigation was actually of little use to Columbus, and his four voyages might have been accomplished just as well without a single observation of Polaris, since his fixed ideas about the positions of the Guards and the length of the degree, and his excessive respect for Master Josephus, prevented him from reaching even approximately correct conclusions, excepting the one very accurate observation at Jamaica.

[92] A. Fontoura da Costa, op. cit., p. 55; L. C. Wroth. *The Way of a Ship*, p. 53.

[93] That Columbus thought of dead reckoning when he thought of navigation at all, might be inferred from his 'Arte de Navegar' Letter of 6 February 1502, to the Sovereigns; but it is probable that this was a reply to an inquiry about the route from Flanders to Spain, on which there was no occasion to shoot the sun or stars. *Raccolta*, I, ii, 161-63, and notes on p. lxii; facsimile text and translation in J. B. Thacher, *Columbus*, III, 226-41.

As navigator, as in everything, Columbus was unique. If he lacked the sturdy empiricism of the old-time Yankee skipper who navigated 'by guess and by God,' he was equal to any navigator in history who relied solely on dead reckoning. Whatever the library navigators and *géographs en chambre* may say, any seaman who has himself navigated the ocean passages and stretched across the Caribbean with its dangerous cays and baffling currents, will have the highest respect for the Admiral. He found new lands more or less by accident when looking for something else; yet he was able to keep so accurate an account of their relative positions that he could find them again after a return voyage to Spain. And, if his Polaris observations fed his odd cosmographical theories more than they helped his navigation, that was typical of Columbus's dual nature: half practical seaman and man of action, half dreamer, mystic and prophet.



Corrections to observed altitudes of Polaris
To find latitude, according to the position of
Kochab (Beta Ursae Minoris)

The Great Eastern *in Long Island Sound*

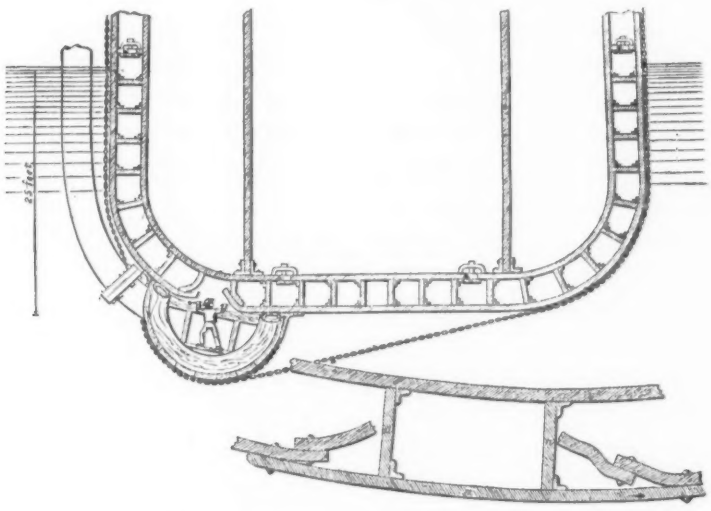
BY DAVID B. TYLER

THE cliffs of Montauk Point appear to rise abruptly out of the Atlantic Ocean. The Coast and Geodetic Survey map shows that actually the tip of Long Island has a broad submerged base which extends north and east. This underwater foundation, known as the 'Endeavor Shoals,' is sprinkled with large rocks. One of these, about two miles due east of Montauk Light and today marked by a black buoy, rises to within twenty-one feet of the surface. It appears on the chart as the 'Great Eastern Rk.' It is well named.

This rock and the *Great Eastern* had their meeting at two o'clock in the morning of 27 August 1862. At that moment the famous steamship extravaganza was heading for Long Island Sound. The officers on watch heard an ominous rumble and felt the ship heel slightly to one side. The pilot who came aboard a few minutes later informed Captain Walter Paton that his vessel had hit a submerged rock not shown on his chart. There was no immediate danger for the *Great Eastern* was built with double sides and bottom and only the outer 'skin' was punctured. She was able, therefore, to proceed to an East River anchorage between Flushing Bay and the site of the recently-built Whitestone Bridge. Her passengers were transferred to a small steamboat and continued their journey for another two hours before arriving at 10th Street, Manhattan. Many of them did not know that anything unusual had occurred.

The *Great Eastern's* enormous bulk was the cause of her troubles as well as the basis of her fame. On her maiden voyage in 1860 thousands of people flocked to view her as she lay tied to a dock at Bank Street, North River. Known as the 'Eighth Wonder of the World' she was far in advance of her day. She was twice the size of any vessel afloat and continued to be without a peer until the twentieth century. Even today her 692 feet would extend for seven-tenths the length of the *Queen Mary*. Her twenty-six foot draft gave her only two feet to spare at neap tide when entering Gedney Channel at Sandy Hook. In her day there was no Am-

brose Channel. For this reason the *Great Eastern* was heading for Long Island Sound when the accident occurred. In the previous month she had used the same anchorage in taking on a cargo of 10,000 tons of grain and coal. This new set-back came just as her distracted owners were beginning to feel that at last she could be made to pay her way.



Mode of repairing the *Great Eastern*
Diagram published in Scientific American, 27 *December* 1862

Divers discovered a rip near the turn of the bilge. The fracture was eighty-six feet long and, though tapering at both ends, measured nine feet six inches at its widest point. Although Captain Paton thought he could return to England in safety he decided not to make the attempt. It was a reluctant decision for he knew repairs would be difficult in America where there was no grid or dry dock large enough to accommodate his vessel.

The well-known consulting-engineers Edward and Henry Renwick were called in. They devised a daring plan which, though not entirely original, had never before been attempted on such a large scale. They built a semi-circular coffer-dam with a rim moulded to fit the ship's side in the manner of a vacuum cup. It was big enough to permit a man to stand up inside. Although it was easy to hold the coffer-dam to the ship's side with chains and cables it was more difficult to seal it in a watertight manner. This was finally accomplished by fitting a hose in a groove

around the rim and then inflating the hose by pumping water into it. The outer edge was covered with brussels carpets and the cracks stuffed with weeds. The water was then pumped out of the coffer-dam through two shafts which extended up to and above the surface. These shafts served as entrance and exit. Captain Paton and Peter Falcon, a diver, were the first to venture inside. When their heads re-appeared at the top of the second shaft the workmen were convinced that it was safe to enter.

Repairs were not completed until the middle of December, three and a half months after the accident. The delay was due, in part, to the press of war work at all rolling-mills, this being the time of the Civil War. It was found necessary to use five-eighth inch instead of seven-eighth inch plate but this thin plate was said to have been made of the best charcoal boiler iron and to be as strong as the other. In any case, no further repairs were deemed necessary when the ship was examined on a grid at Birkenhead after her return to England.

A ghost was responsible for part of the delay. It was the ghost of a riveter who disappeared when the *Great Eastern* was being constructed and who was generally supposed to have been sealed up inside the two 'skins.' There was a space there about two feet wide, divided into compartments by horizontal and vertical bracing. In the quiet of midnight the ghost was heard at work with his hammer. On one occasion a diver signalled to be brought to the surface and arrived there white with fright. He said the ghost had been hammering just above his head. The divers called in a spirit medium who confirmed their fears by declaring that the riveter was there both 'in body and in spirit.' Since the men were refusing to work Captain Paton got busy. He rowed around the ship in a small boat and discovered that the knocking sound came from the banging of a swivel connected with the mooring. Work was resumed. It is said that, when the *Great Eastern* was broken up some twenty-five years later, workmen found the riveter's skeleton. Anyone who is familiar with this vessel's checkered career will feel that a skull and some bones would have been appropriate equipment.

Manuscript Maps in the William L. Clements Library

BY LLOYD A. BROWN

Curator of Maps, William L. Clements Library

THE five hundred and fifty manuscript maps in the William L. Clements Library, Ann Arbor, Michigan, constitute a mass of geographic data and military intelligence compiled between 1755 and 1800. They were executed for the use of civil and military authorities responsible for the development of British colonization in North America and the West Indies. In scope these maps, charts and plans vary from small, crudely executed sketches of local areas and temporary fortifications to large-scale, carefully compiled and beautifully executed surveys of North America and parts thereof. Their importance, at the time they were executed, must have varied as widely as their scope, but their present-day value to historians and students of historical cartography, especially those interested in the pioneering efforts of civil and military engineers, is universal. They are perhaps the most important unit in the Map Division of the Clements Library, and among the immense cartographic resources of American libraries they are outstanding representatives of the period.

Although most of these maps represent four distinct collections acquired from the same number of sources at different times, together they fall into an uninterrupted chronological sequence, illustrating graphically the progress of British expansion in North America and the accompanying growth of geographical knowledge of the region. The earliest of these cartographical efforts were acquired with the papers of General Thomas Gage (1721-1787), second son of Viscount Gage in the peerage of Ireland. General Gage first saw service in America when as lieutenant-colonel of the Forty-fourth Regiment of foot, formerly the Fifty-fifth, he served with his regiment under Braddock in the campaign which ended disastrously for the British in 1755. Three years later Gage commanded the light infantry in Abercromby's expedition against Ticonderoga. He was commissioned a brigadier-general and superseded Sir William Johnson in 1759. During the final conquest of Canada he com-

manded the rear guard under Amherst. As a reward for his faithful and meritorious services, Gage was made commander-in-chief in North America in 1763, with headquarters in New York. He held the post until 1775 when he returned to England.

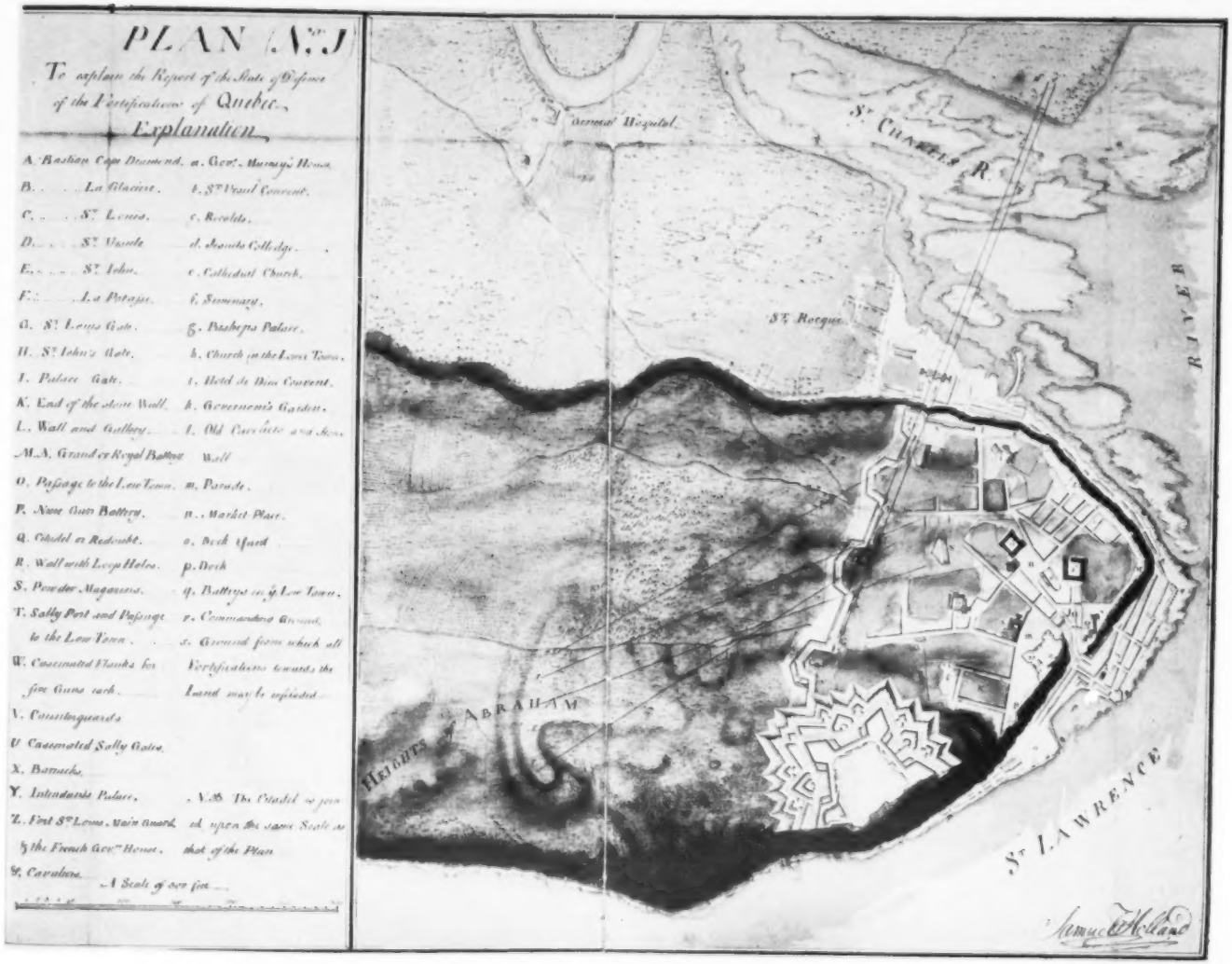
During his twenty years of military service in North America Gage saw many changes wrought in what had been a far-flung group of disjointed colonies. Many developments were carried on by his command and under his personal supervision. One of the manuscript maps, showing the cantonment of his forces in 1766, indicates the wide dispersement of his command necessary to garrison not only the coastal defences, but also the frontier posts at the extremities of the British Dominion, as far west as Fort Chartres on the Mississippi River and Fort Michillimackinac at the strait between Lake Michigan and Lake Huron. Along the Atlantic coast British garrisons were maintained from St. Johns and Placentia on the island of Newfoundland as far south as St. Augustine in East Florida. On the coast of the Gulf of Mexico, the Twenty-first Regiment was stationed at Mobile, and the Thirty-first occupied the fortifications at Pensacola, West Florida. Somewhere out in that vaguely defined area northwest of the Ohio River known as the Illinois country, nine mobile companies of the Thirty-fourth Regiment guarded British interests in the lucrative fur trade of the region, acting at the same time as a deterrent to encroachments by the French, just beyond the Mississippi River.

From 1763 to 1775 when he returned to England, Gage was responsible for the maintenance of existing fortifications and the building of new ones, as the situation demanded. Land and water routes had to be protected and kept open. The efficient administration of this enormous task entailed a vast correspondence between Gage and his subordinates. His engineers and regimental officers were required to make regular and detailed reports on the temper of the Indians and the French, and on the progress of trade among the former. They discussed the soil and other natural resources of the interior and the possibilities of further exploitation. Maps and plans were enclosed in many of these reports; among these were surveys of roads, indicating the location of forts, towns and prominent buildings. Such was the *Plan of the roads between Boston and Albany,* surveyed in 1765 by one Francis Miller and copied by William Brassier, sometime deputy draughtsman in the office of the Ordnance. Drawn on a scale of two miles to an inch, the survey includes the Berkshire trail and the old Worcester turnpike.

Two military officers in this period who contributed a large share to the surveying of His Majesty's dominions in North America were Cap-

A manuscript map of Delaware Bay and the Chesapeake, made in 1781, with marginal notes in General Sir Henry Clinton's handwriting

William L. Clements Library, Ann Arbor, Michigan


PLAN A.B.J
To explain the Report of the State of Defence of the Fortifications of Quebec.
Explanation
A. Bastion Cap Diamond.
B. La Glacière.
C. St. Louis.
D. St. Ursule
E. St. John.
F. La Potasse.
G. St. Louis Gate.
H. St. John's Gate.
I. Palace Gate.
K. End of the stone Wall.
L. Wall and Gallery.
M.N. Grand or Royal Battery
O. Passage to the Low Town.
P. New Queen Battery.
Q. Citadel or Redoubt.
R. Wall with Loop Holes.
S. Powder Magazines.
T. Sally Port and Passage to the Low Town.
V. Casemated Flanks for five Guns each.
V. Centinel guards
U Casemated Sally Gate.
X. Barracks.
Y. Intendants Palace.
Z. First St. Louis Main Guard.
&. the French Gov.r House.
&. Cavaliers.
a. Gov.r Murray's House.
b. St. Ursul Convent.
c. Recolets.
d. Jesuits Colledge.
e. Cathedral Church.
f. Seminary.
g. Bishops Palace.
h. Church in the Lower Town.
i. Hotel de Dieu Convent.
k. Governor's Garden.
l. Old Curtain and Stone Wall
m. Parade.
n. Market Place.
o. Dock Yard
p. Dock
q. Battrys in the Low Town.
r. Commanding Ground.
s. Ground from which all Fortifications towards the land may be enfiladed.
A Scale of 200 feet
N.B. The Citadel is projected upon the same Scale as that of the Plan
Samuel Holland
St. CHARLES R.
St. Roque
RIVER
ABRAHAM
HEIGHTS
St. LAWRENCE

The environs of Quebec in 1762, with a plan of the citadel proposed by Captain Samuel Holland overlaid on the base map

tain Thomas Hutchins of the Sixtieth or 'Royal American' Regiment, a native of New Jersey and surveyor of wide experience, and Lieutenant Philip Pittman, who came to America with the Forty-eighth Regiment of foot. A great many of their maps and plans were forwarded to General Gage, by whom they were retained. The services of these two gentlemen were very much in demand, and they were forced to travel extensively. They surveyed the Mississippi and the Iberville Rivers. They charted the coastline of the Gulf of Mexico and the harbor defences belonging to Great Britain. They made ground plans of forts. They travelled the length of the Ohio River more than once, mapping as they went. They furnished the commander-in-chief with important intelligence regarding the strength of the French and Spanish settlements. At one time Hutchins served as an interpreter for his government during treaty negotiations with the Indians. Both Pittman and Hutchins wrote books which were at the time authoritative accounts of a strange land which few Englishmen hoped or desired to investigate in person. Pittman's book: *The Present State of the European Settlements on the Mississippi; with a Geographical Description of that River. Illustrated by Plans and Draughts* (London, 1770) is, in effect, a compilation of the reports which the author wrote periodically to his commander-in-chief. These reports, together with copies of the five manuscript 'Plans and draughts' made to illustrate the work, were retained by Gage in his map collection; duplicates were sent to Nourse, the publisher. Among these is *A Draught of the River Missisippi from the Balise up to Fort Chartres*. Gage's copy is drawn on a scale of three leagues to an inch. The published copy, much reduced, was engraved on three sheets by Thomas Kitchin.

Captain Thomas Hutchins published in 1778 *A Topographical Description of Virginia, Pennsylvania, Maryland, and North Carolina, comprehending the Rivers Ohio, Kenhawa, Sioto, Cherokee, Wabash, Illinois, Missisippi, &c.* This work contains two maps, manuscript copies of which are in the Gage Collection. The book was written, as the author relates in his preface, to explain his large-scale map published the same year under the title *A New Map of the Western Parts of Virginia, Pennsylvania, Maryland and North Carolina. . . .* Among other Hutchins maps in the Gage Collection are manuscript draughts of the composite map and two plans made to accompany *An Historical Account of the Expedition against the Ohio Indians* (London, 1766). The text, by William Smith, was formerly attributed to Hutchins.

The combined military and civil resources of the Southern Department under the administration of John Stuart, Esq., Superintendent of

The environs of Quebec in 1762, with a plan of the citadel proposed by Captain Samuel Holland overlaid on the base map

Indian Affairs, were mustered to produce the largest map in the Gage Collection: *A Map of West Florida part of E^t Florida, Georgia, part of S^o Carolina including* [the] *Chactaw, Chickasaw & Creek Nations* . . . [1773]. This map, measuring 66 by 102 inches, was compiled from the surveys of David Taitt, Elias Durnford, and Bernard Romans. Extensive 'Remarks' on the territory were supplied by Romans. The actual draughtsmanship, identified by a comparison with two other versions of the map, one in the Public Record Office in London, the other in the Ayer Collection at the Newberry Library in Chicago, has been identified as the work of Joseph Purcell. Included in this survey is the land as far north as the head of the Yazoo River and on the south the Gulf of Mexico; on the east, Charlestown, South Carolina, and on the west the Mississippi River and six hundred miles of the Red River of the south, as far west as 'Turkey Bluffs.' The scale of the map is sixty common English miles to an inch. The purpose of the survey was to provide a basis for the purchase of extensive lands from the various Indian tribes of the region. Besides a valuable 'Table of Distances' which locates many long extinct place names, the boundaries between the various tribes of the south are delineated, insofar as they could be determined by the surveyors. For several years this survey was the chief source of geographic information on the Southern Department available to the home government, and was therefore revised and kept up to date. Local surveys used in its compilation are also in the Gage Collection.

In 1764 Captain Samuel Jan Hollandt, who signed himself Samuel Holland, received a special commission of great import, while attached to the Sixtieth or 'Royal American' Regiment. It read 'Surveyor General of Lands for making a survey of the Northern District upon the continent of North America.' From 1765 to 1772 Captain Holland, with fourteen men elected from the Sixtieth Regiment, surveyed in minute detail His Majesty's Northern District: the coastline including the gulf and river of St. Lawrence, the island of Cape Breton and the smaller islands and river courses as far down as the Maine coast. During the first winter Lieutenant Haldimand, one of Holland's principal assistants and draughtsmen 'unfortunately drowned,' and Ensign George Sproule, fresh from Woolwich, was sent over to replace him. Although Captain Holland at first complained about Sproule's weakness in mathematics, he made no complaint about his draughtsmanship, which was superb. Many copies of the maps made during the survey were sent to Gage for his approval; nearly all of these were drawn and tinted by Ensign Sproule. One of these, his *Plan of the Island of Cape Breton* on a scale of

four miles to an inch is not only accurate, but is likewise a masterful example of draughting skill.

In 1772 Captain Holland estimated it would take five more years to complete the survey. Two years later, the great survey of North America began to bear fruit in the form of engraved charts under the title *The Atlantic Neptune, Published For the use of the Royal Navy of Great Britain, By Joseph F. W. Des Barres, Under the Directions of the Right Hon'ble the Lords Commissioners of the Admiralty*. The difficulties and expense involved in this survey were not lessened by the outbreak of war between Great Britain and the colonies, but the work went on in spite of all handicaps, as is evidenced by manuscript draughts, rough sketches and engraved proofs without letters found in the maps of Sir Henry Clinton, who first arrived in America in May of 1775 with Generals Howe and Burgoyne.

Clinton's rank at this time was local lieutenant-general. In the long campaign which followed, he was commissioned local general, and when in 1777 Sir William Howe returned to England, Clinton was made commander-in-chief of the army in North America. His chief engineer was Captain John Montresor, an officer of long experience, who had already surveyed hundreds of square miles of American soil under the direction of his father, Colonel James Montresor. Thanks to Captain John Montresor and his able assistants, Clinton was supplied with all available cartographic intelligence. His papers include over three hundred and fifty maps, most of which are manuscript. Of the manuscript maps, many were drawn by Montresor himself; others were done by subordinates but signed by the chief engineer. On his staff were officers of the Corps of Royal Engineers and officers detached from the various regiments stationed in America. Many of the names, such as John Collet, Edward Fage, Claude Joseph Sauthier, and James Cook are familiar to students of early cartography in connection with the map and atlas publications of William Faden, Thomas Jefferys, Messrs. Sayer & Bennett of London, and Le Rouge of Paris.

Sir Henry Clinton's Collection,[1] as would be expected, contains a great many field maps and sketches, plans of forts and temporary lines of defence, and fewer surveys made on a large scale. His are the 'Headquarters' maps made expressly for the British campaign in North America between 1775 and 1781, and are therefore unusually important historically as well as interesting pictorially. On some, the topography of

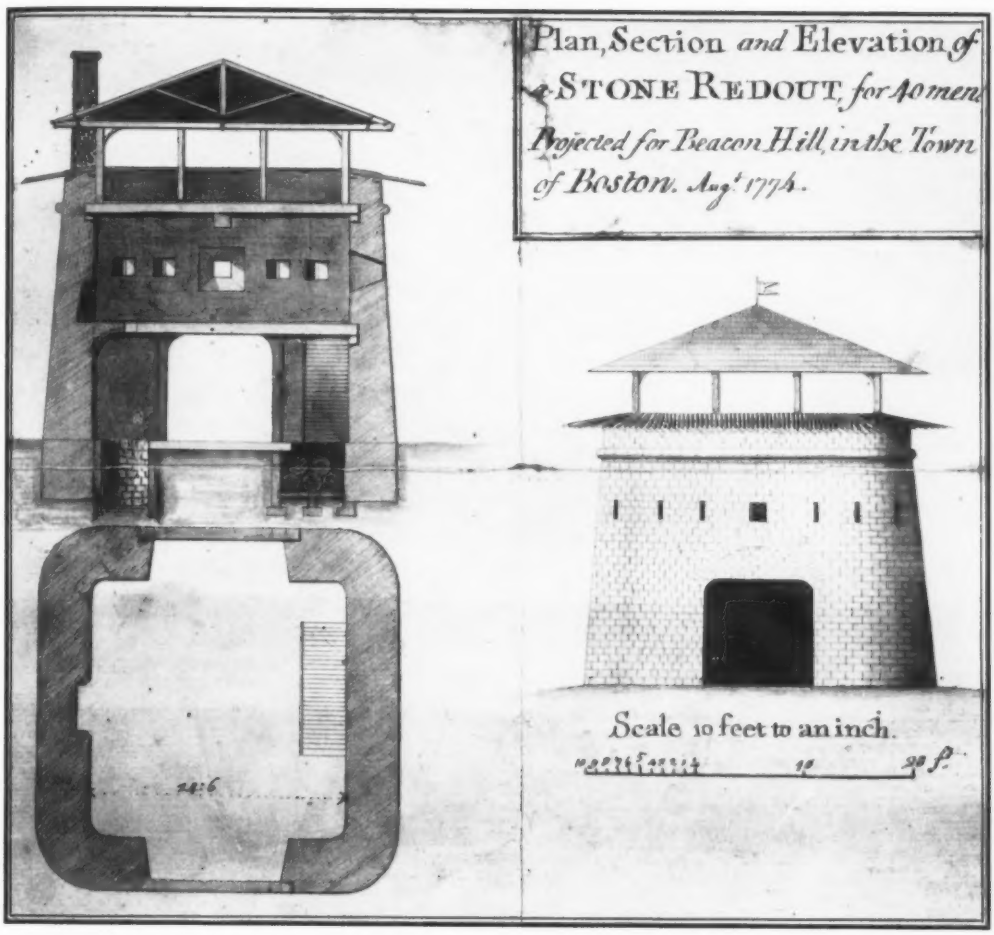
[1] For full descriptions of each map in this collection, see Randolph G. Adams, *British Headquarters Maps and Sketches* (Ann Arbor: The William L. Clements Library, 1928).

a local region is stressed; on others the roads and important landmarks are given primary consideration. All pitched battles were carefully mapped, with reference to the topography and movements of the troops; usually Clinton annotated such maps with his own version of what happened. Copies were sent home and published without delay, showing an unperturbed but interested public why the war would soon be over and the rebellion suppressed.

His Excellency George Washington was well aware of Clinton's well-organized system of intelligence, but it is doubtful whether he realized what a vast amount of information was transmitted to the British commander by American Loyalists. By the year 1778, when it became apparent that the rebellion, aided by the resources of France, might be successful, the American Loyalists became vitally concerned with the outcome of affairs; their passive support of the first three years became a desperate hope that Britain would emerge victorious. Sir Henry, quick to capitalize on the panic of the Loyalists, posted larger rewards for active service to the king, either in the armed forces or for information which would help the cause. Scores of written reports and hastily drawn maps and plans found their way to General Headquarters, always unsigned and usually undated. Quietly the Associated Loyalists and other groups were organized and added to Clinton's pay-roll.

The unofficial chief of Clinton's intelligence division was his adjutant and aide-de-camp, Major John André. No fewer than eight of Clinton's maps which should properly be classed as intelligence: namely, maps showing details of rebel troop movements and plans showing the position and size of gun emplacements in and around West Point, have been identified as the handiwork of the unfortunate major. Others, which have not been identified positively, show characteristics of layout and penmanship which make them at least suspect. Further study of the Clinton papers will doubtless reveal their connection with the historic plot of Benedict Arnold to sell out the American garrison at West Point.

While the British generals manoeuvered and fought in a hostile and unfamiliar country, Lord George Sackville (later Lord George Germain), third son of Lionel Cranfield Sackville, seventh earl and first duke of Dorset, tried without success to direct the campaign from London. With an undistinguished military career behind him, Lord George was appointed Lord Commissioner of Trade and Plantations and Secretary of State for the colonies by Lord North. He held the latter post, unimportant under normal circumstances, from 1775 to 1782. From his correspondence during this period we know he received many maps and


Plan, Section and Elevation of
a STONE REDOUT, for 40 men
Projected for Beacon Hill, in the Town
of Boston. Augt 1774.
Scale 10 feet to an inch.

A manuscript plan of a redoubt designed by Captain John Montresor in 1774, but never built

William L. Clements Library, Ann Arbor, Michigan

UNIV. OF MICH.

plans from America, but he retained only a few. Doubtless the greater part of the lot were turned over to the Board of Trade; some went directly to George III. Though the Germain Collection is important, it is unorganized, representing British affairs scattered over a wide area. Several maps, however, are noteworthy from the standpoint of execution. Among these are a *Map of the coast of Hunduras from the Bay of Truxillo to the River Dulcee* . . . executed by Bernard Ratzer; another is a beautiful map on sheepskin: *St. Eustatia topographically drawn & humbly dedicated to His Excellency General Vaughan . . . By P. F. Martin* [c. 1781]. Of greater interest to students of American history, perhaps, is the manuscript *Survey of Lake Champlain including Crown Point and S^t^ Johns. Surveyed by order of His Excellency Major Gen^l^ Sir Jeffery Amherst* . . . By Wm. Brassier Draughtsman. The original of this survey, now in the Faden Collection in the Library of Congress, was laid down on a scale of two miles to an inch. This copy, made by William Test in 1776, is on a scale of one mile to an inch; it is carefully shaded to indicate elevations and tinted by an expert craftsman. Brassier's survey was standard during the eighteenth century when the inland water route from New York to Montreal and Quebec, by way of the Hudson River, Lake George, Lake Champlain and the St. Lawrence River, was an important link between the lower colonies and the province of Quebec. It was engraved and published many times in greatly reduced form, appearing separately and as an inset on more general maps of the region. A section of it was used to illustrate *The Attack and Defeat of the American Fleet under Benedict Arnold, By the Kings Fleet Commanded by Capt^n^ Tho^s^ Pringle, upon Lake Champlain. the 11^th^ of October,* 1776 (London: Wm. Faden, 1776).

William Petty, first marquis of Lansdowne, better known as Lord Shelburne, was a prominent M. P. with a background of military experience acquired in the Third Regiment of foot-guards. As Baron Wycombe he took his seat in the English House of Lords in 1761. During Grenville's ministry he was given the post of President of the Board of Trade and Foreign Plantations. In 1766 he was made Secretary of State for the Southern Department. These two posts brought Lord Shelburne into close contact with affairs in America. Through his hands went many of the reports on colonial affairs and many maps. Of the latter which he retained and bound in with his official correspondence, there are six plans of unusual interest, executed by Captain Samuel Holland, already mentioned in connection with the mapping of the Northern Department, about the year 1765.

Plan No. 1 was drawn 'To explain the Reports of the State of Defence

of the Fortifications of Quebec.' This plan, beautifully tinted, shows the city and environs with details of the existing fortifications. An overlay, drawn on the same scale as the plan (nine hundred and sixty feet to an inch) gives the size and shape of the citadel designed to strengthen the site of Cape Diamond. Plan No. 2 shows 'The Ground whereon the Citadel is proposed to be built: The Ground Lines of the present fortifications are colour'd yellow, and those of the proposed, red. . . .' Plan No. 3 is a top view 'Of the Citadel compleatly finished' showing the bastions provided with casements for six hundred men each, drawn on the same scale as No. 2. Plans 4, 5 and 6 are working plans, detail drawings of the foundation, the ramparts and casements; here too are profiles of the lunettes, bastions, ravelins and ditches. In fact, this set of plans is so complete as to detail, that with them it would be possible to construct the citadel today without further information. And it is safe to say that had this elaborate citadel been built before 1775, the American expedition under Montgomery and Arnold would have faired badly, to say the least.

Every effort has been made to add to the four collections outlined above, and though original material of this type is by no means common, the library has been fortunate enough to acquire more than twenty additional manuscript maps by gift and purchase which complement to a remarkable degree the material in the basic collections.

Federal Archives Relating to Matthew Fontaine Maury[1]

BY LEWIS J. DARTER, JR.
The National Archives

WHILE Matthew Fontaine Maury was superintendent of the Depot of Charts and Instruments, an agency which later became the United States Naval Observatory and Hydrographical Office, he earned the title of the 'Pathfinder of the Seas,' by which he has been popularly known ever since. This title he acquired by charting the wind and ocean currents, an activity upon which his fame chiefly rests. The records which resulted from his services to the federal government during this period are, therefore, of prime concern to us, for they illustrate in a remarkable way how the work of a famous individual is revealed in archival collections.

While Maury's creation of federal archives began with his appointment in 1842 and ended with his resignation in 1861, when he entered the Virginia Navy, his story from an archival point of view could be continued in the archives of the State of Virginia, in the archives of the Confederate Navy, where, for a time, he served as Chief of the Naval Bureau of Coast, Harbor, and River Defense and where he did pioneer work with electrical torpedoes, and in the records resulting from his missions abroad. Even here, Maury's archival history does not end, for, from 1865 to 1866, he served under Maximilian, Emperor of Mexico, as Imperial Commissioner of Colonization and as Director of the Astronomical Observatory. Following his services in Mexico, he became professor of physics at the Virginia Military Institute and served the state government of Virginia as Director of the Physical Survey. Thus, from his entrance into the navy in 1825 until his death in 1873, he served many governments in many capacities. Archival collections of the state government of Virginia, of the government of the Confederacy, and of the government of Mexico would thus have to be consulted for a complete study of his work, as well as personal papers in the Manuscript Division of the Library of Congress, in private hands, and elsewhere.

[1] Paper read at the fourth annual meeting of the Society of American Archivists, Montgomery, Alabama, 12 November 1940.

Fortunately, the archives resulting from Maury's work for the federal government have been preserved almost intact. These archives fall into two groups: the correspondence of the office which he administered, and the collection of abstract logs, from which he mined as from a quarry the meteorological data for the compilation of his charts. Curiously, because of administrative changes in the federal government, these two archival groups became completely separated, and had to be consulted, until they were transferred to The National Archives, in two widely separated repositories in Washington. This separation took place in 1866 when the Naval Observatory was divided from the Hydrographic Office, the former retaining the correspondence files and the latter the collection of logs. When in 1904, the work in marine meteorology was assigned to the Weather Bureau, the logs became part of the collection of that bureau. The correspondence files, on the other hand, remained part of the Naval Observatory collection.

The correspondence, covering the years 1842 to 1861, consists of seventeen letter books containing full copies of all letters sent, and files of letters received. The letter books are indexed alphabetically by addressee, and comprise approximately three linear feet. The letters received are arranged chronologically into several series, and have no index. They comprise approximately eight linear feet. This correspondence is important source material for a study of Maury himself; for the administrative history of the agency over which he presided; for information relating to the far-flung activities in which he interested himself, and, most important, for the light it throws on the wind and current charts, the conditions of the times and especially on maritime history.

The Observatory constituted the hydrographic branch of the Bureau of Ordnance and Hydrography, making Maury responsible to the chief of that bureau as well as to the Secretary of the Navy. Therefore, documents relating to the administration of the Observatory are found not only in the files of the Observatory itself, but also in the files of the Bureau and of the Secretary's office. These records make clear the role played by Maury as administrator, especially as his plans and accomplishments had to be reported clearly to his superiors. In fact, there is much concerning the administration of the whole department, since Maury was keenly interested in every aspect of the navy. He had first come to public notice through his early writings on naval problems and his official position now enabled him to write knowingly. With intimate friends he discussed disciplinary and training problems, naval policy and strategy, and organizational reforms. His refusal to abide by the treatment meted

out to him by the Naval Retirement Board in 1855 resulted in many records revealing what he considered to be the jealousy and injustice of the many high officials on that board.

Problems of pure administration called for a large portion of Maury's time: equipping the observatory, writing reports, keeping accounts, superintending the building, grounds, and physical properties, and straightening out problems of personnel administration and employee relationships. All of these activities necessitated countless letters, minutely describing every phase of life at the Observatory. To his friends, and particularly to John Quincy Adams, Maury eagerly described the activities of the office, detailing the functions performed by each person and his plans and hopes for the future. The everyday duties of the Observatory were varied. It devised, purchased, tested, and repaired all navigation instruments and supplied them to naval vessels. It rated chronometers and made astronomical, meteorological, and magnetic observations. It kept informed of all improvements and discoveries in science, especially in connection with navigation, and acted as advisor on all such problems. Lastly, what was to become the most important function, it secured and distributed all necessary charts and nautical books. Although Maury's duties were clearly defined he, by becoming an official of inquiry and advice, was perfectly free to spread his interests and activities over a wide field.

Maury's own interests led him to expand the hydrographic work of the office, but he never entirely neglected the other duties. Under his careful and constant direction the Observatory was constructed and became, in so far as equipment was concerned, the second most important in the world. Certain scientific observations were absolutely necessary for the rating of chronometers and the preparation of a nautical almanac. But in addition to this necessary work Maury planned an ambitious program of astronomy which included a catalogue of the stars. Though this work was never completed it was during this undertaking that the observations were made from which the orbit of Neptune was ascertained.

The superintendency of the Observatory naturally led Maury to studies and experimentation of scientific apparatus. Under Maury's superintendency John M. Brooke invented a practical deep-sea sounding apparatus, and Maury was ever ready to encourage experiments with electrical apparatus. He corresponded with the pioneer inventors of self-registering instruments; with Samuel F. B. Morse and countless others. He was much interested in Cyrus R. Field's attempts to lay the Atlantic

cable, plotting for him the 'telegraphic plateau,' which he had discovered and on which the cable was laid.

Maury was often called upon by Congressmen, Congressional committees, and others for advice relating to naval problems and marine legislation, and also for opinions on many subjects far afield from his office. He supplied technical advice relating to railroads, canals, and roads. For example, John C. Calhoun frequently wrote in regard to the question of transportation to California. In one particularly full reply Maury strongly favored a transcontinental railroad in preference to either a railroad or canal across the isthmus.

One of Maury's greatest disappointments arose over the failure of Congress to permit him to expand his system of marine meteorology to the land. He wished, as he wrote, to extend the Observatory 'out into a hydrographical and meteorological department' where 'I will . . . digest the farmers' reports . . . , and telegraph the results all about.'[2] This service, similar to that later performed by the Weather Bureau, was not authorized by Congress probably because it was considered a duplication of the very fine and long established meteorological system of Joseph Henry at the Smithsonian Institution. However, much of Maury's correspondence during 1855 was concerned with his plans for agricultural meteorology.

Before the records arising from his wind and current charts are described, it might be well to indicate the surprising breadth of the general correspondence of the Naval Observatory. These files reveal more completely than would similar files of the present time the scope of the activities and interests of Maury, for at that time the head of an agency had a closer control over the office routine. He delegated fewer duties to his subordinates, and assumed a greater degree of responsibility for their work. Maury thus signed all letters; the ideas, the policies, the actions reflected in them appear to be his alone, and Maury's activities covered a field far wider than his official duties would indicate. In fact, all the activities of the day, economic, political, and social passed before his eyes and were recorded in letters sent out from the Naval Observatory. It is natural and to be expected that one finds much correspondence between Maury and the leading scientists of the day: Humboldt, Jomard, Loomis, Espy, Aggassiz, Faraday, Leverrier, and others. But one is continually surprised at the personal nature of much of the correspondence. Following a brief letter, for example, acknowledging the receipt of a chronometer may be found a many paged letter on the sublime relation-

[2] M. F. Maury to B. F. Minor, 20 November 1855 quoted in Diana Fontaine Maury Corbin, *A Life of Matthew Fontaine Maury* (London, 1888), p. 78.

ship of God to science, this in turn followed by a letter discussing the merits and demerits of steam navigation or the importance of de Lesseps' endeavours at Suez. His letters are frequently prefaced by paragraphs on his and his family's health, travels, and occupations. Autobiographical sketches written for publication are illuminating. With his colleagues in the government Maury frequently corresponded. He was co-operative with them, but punctilious over his own method of doing things and ready to fight at any infringement on what he considered his rights. He believed that most people were jealous of his eminence. When credit, that he thought due him, was given to others he was prompt to take offense. He carried on long sustained controversies with Joseph Henry of the Smithsonian Institution and was frequently caustic toward A. D. Bache of the United States Coast Survey and toward Edmund and George W. Blunt, the nautical publishers of New York, with whom he had had long and intimate dealings.

Maury's interest in Latin America, the opening of the Amazon, naval expeditions and explorations is fully covered in his official correspondence as is his interest and participation in the Southern Commercial Conventions. His writings on the movement for direct Southern trade bring out interesting geographical implications concerning the importance of the Gulf Stream.

His letters would probably repay a careful searcher, for he was in close touch, both officially and personally with the leaders of the day. He was on the inside of much that was done and wrote freely about it.

On matters affecting the state of the Union he was not indifferent. As early as 1845 he had begun to write seriously concerning the various elements at work 'to try the strength of the Constitution,' and advocated a strong system of internal improvements to counteract the sectional jealousies being fostered, as he thought, by political and religious agents. He felt that Lincoln's election did not necessitate secession, but he was loyal to Virginia. Maury's resignation from the navy, following Lincoln's call for volunteers and the secession of Virginia, was written on April 20. His going aroused much bitterness and he was accused of countless crimes and plots, specifically of having removed vital buoys. Records, however, show Maury working 'as hard and as faithfully for "Uncle Sam" up to three o'clock' of the day he resigned as ever.[3]

It has been estimated that about twenty per cent of the correspondence of the Observatory between 1848 and 1860 refers to the wind and current charts. This indeed was Maury's principal activity and herein

[3] Matthew F. Maury to Wm. C. H., 12 May 1861, ibid., p. 196.

lies the real significance of the archives, for Maury's personal thoughts and activities can probably be found more easily in his published writing or in the numerous collections of personal papers.

When Maury assumed office in 1842 he became convinced that his chief duty should be the preparation of ocean charts. Less than two months after he took up his post he had to admit that the files of the office could furnish no hydrographical information as to certain portions of the Gulf of Mexico. Charts on naval vessels were found to be over one hundred years old and quite useless. In 1845 he wrote the Secretary that the office did not know whether there was a frigate harbor on the east side of Florida, a remarkable circumstance, he continued, since we have owned Florida for more than a quarter of a century and since we purchased it chiefly for national defense. Navy officials, such as Farragut, often wrote complaining that the charts in use were worse than none since they led one into error and difficulty. Almost all charts supplied by the Observatory were purchased either from private sources in New York or from foreign governments. The delays and difficulties encountered were often serious and it was felt by Maury that national pride and security was damaged by the necessity of depending on foreign charts for the navigation 'of our own Lakes and inland seas' and even for our naval vessels going to Washington.

The custom of storing old logs at the Observatory gave Maury an opportunity he had long desired. Late in 1843 he requested authority to construct a chart of the North Atlantic and to make revisions as necessary. Estimates, proposals, justifications, procedures were furnished and permission was eventually granted. For this first chart Maury depended chiefly on the logs at hand, but already he had devised a plan to secure the co-operation of all seamen. Various drafts and proposals reveal the crystallization of his ideas and in November 1844 the plan for 'abstract logs' was presented. The plan, as finally approved, sought to have all vessels record the hydrographic and meteorologic conditions encountered in an 'abstract log' furnished each co-operating vessel. These abstracts were then to be returned to the Observatory. Early in 1848 Maury issued such 'abstract logs' and distributed them to government and private vessels.

The idea behind the plan was that by plotting the experience of thousands of mariners over a span of years he could show on charts the prevailing winds, currents, weather, depths, obstructions, etc. of the oceans and in this way lay out 'lanes' to be followed at different seasons. There were six series of charts published. These showed:

the prevailing winds and currents, their general characteristics, and all the physical features of the oceans, including its meteorology, the limits of icebergs, the feeding grounds of whale, and all facts of interest and value to the maritime community.[4]

The first test of Maury's ideas came in 1848 when Captain Jackson sailing by Maury's chart, brought the *W. H. D. C. Wright* into Rio thirty-five days after leaving the Capes of Virginia, a considerable shortening of the voyage. After this test the abstract logs began to pour in through Maury's agents at Boston, Nantucket, New Bedford, Salem, and New York, and praise came from all quarters especially from maritime and scientific interests. Typical of the former is a letter from Captain Joseph C. Delano, an ex-packet captain and, as Maury wrote, 'one of the best navigators and most intelligent men who have ever sailed out of the port of New York.' Delano was the brother of Warren Delano, the great-grandfather of Franklin Delano Roosevelt.[5] Delano wrote that the whole commercial community 'begins to appreciate the importance of your labors and I hope you will be rewarded by a generous appropriation to carry on the work.' The use of Maury's charts was responsible to a large extent in making possible the famous quick voyages of the fifties. The distance to California was reduced from voyages of 150 to 200 days to voyages frequently under 100 days and this at the height of the gold rush.

In 1853 the International Maritime Conference held at Brussels through Maury's instigation set up a system of international co-operation which brought to the Observatory correspondence and logs from scientists and ships of all nations and gradually the charts were expanded to cover all navigable seas.

Maury was a voluminous writer as were many of the sea captains. Not content with sending their abstract logs they regularly wrote him describing their ships, crews, cargoes, voyages, and ports of call, in addition to discussions of hydrographic and meteorologic conditions. They requested information on all points connected with the sea and shipping and tendered advice ranging from the charts to politics, economics, and sociology. Maury answered most such letters and in these freely gave his thoughts on all subjects. He discusses governmental and private maritime policy, comments on the service and ability of sea lines and seamen; analyzes voyages and advises how to reduce the time or avoid storms, where to find whales, speculates on mild climatic regions in the Antarctic, and answers questions of physics, of meteorology, of astron-

[4] *Report of the Joint Commission to Consider the Present Organizations [of certain Bureaus] . . . , Senate Report*, 49 Congress, 1 Session, No. 1285, pp. 26-27.

[5] Robert G. Albion, *Square-Riggers on Schedule; The New York Sailing Packets to England, France, and the Cotton Ports* (Princeton: Princeton University Press, 1938), p. 334.

omy, zoology and hydrography; suggests changes in design of ships and improvements of instruments; problems he is unable to answer he sends on to his friends, Aggassiz, Silliman, Henry, etc. Maury's frank comments on voyages and seamen give a clear picture into the character and ability of the captains famous in maritime history. Especially rich is the collection in material relating to Robert B. Forbes, a retired sea captain of Boston who did much to put Maury's plan into operation. Forbes was as versatile in his interests and accomplishments as Maury and his large correspondence with Maury reveals him as the originator of many of the ideas, such as the east-west sea lanes, which Maury worked out in detail.

Beside correspondence the Maury archives consist of the abstract logs received at the Observatory. There are 4,700 abstract logs covering the period 1784 to 1861. These abstract logs were bound haphazardly into approximately 400 volumes. By means of a card index compiled by a WPA project The National Archives has prepared a descriptive list alphabetically by name of vessel, showing type of vessel, master, destination, and dates.

The abstract log contained ten pages of instructions and other pages for entries showing position, hourly rate of currents, thermometer in air and water, barometer just before, during, and after a gale, with wind and weather data, magnetic variation and marine phenomena, such as whales, birds, icebergs, derelicts, shoals, seaweed, etc. The purpose for which the logs were collected has been completely met. All the hydrographic and meteorologic data was drawn off and incorporated in the charts and in Maury's *Explanations and Sailing Directions*. Other oceanographical and geographical data was used by Maury in compiling his *Physical Geography of the Sea* and in his other geographical writings. But the extraneous material makes these abstract logs exceptionally important for further searches. In addition to columns for scientific data a space was reserved for 'remarks' and here the keeper of the log would record the events of the voyage or his own thoughts. Thus for the historian, the genealogist, the biographer, even the student of administrative history this collection contains much information. For administrative history one can re-create the methods used and by remarks made on the margins by the assistants one can trace the work done by each and the organization of the great task among the personnel of the office. Supplemented by the correspondence the daily routine can easily be reconstructed. Only by examining these abstract logs and realizing that they were the tools with which Maury worked can one grasp the true magnitude of his labours.

Logs of packets are especially full of information giving names of emigrants, deaths, births and, at times, descriptions of persons. Such information has often proven valuable to the genealogist.

The most important aspect of the logs is, however, the details, therein contained, of maritime history. Some of the logs will, of course, contain only the hydrographic data without remarks, but even these will give much desired information concerning a famous voyage or race, day and hour of leaving, distances covered, sailing times, etc. Even if no comment is made in the log thrilling fights against wind and current can be read in the entries of latitude and longitude, wind velocity and direction. There is a great scarcity of information concerning the character and history of most sea captains and seldom have these abstract logs (and even more important the Maury correspondence) been examined for this purpose. As Maury wrote, the logs 'give us an insight into the character of navigators for it clearly distinguishes those who know how to take advantage of winds from those who do not.' But leaving entirely aside their ability as seamen the logs, particularly of a vociferous captain, will contain pages of comment which reveal his personality as nothing else can. Sullen crews, constant drunkenness, desertions, insubordinations and mutiny, repeatedly complained of are evidence of the decline of the American seaman and the difficulties of a captain. Adventure abounds in attacks by pirates or unfriendly natives. The opening of trade relations with the Far East is indicated in the abstracts of the log of the voyage in 1784 of the *Empress of China* and logs of naval explorations; the golden age of the China clipper era by the abstract logs of the *Rainbow, Oriental, Houqua,* and *Sea Witch.* Mariners were observant travellers and blank sides of the abstract logs were filled with descriptive material of voyages and distant lands. Shipwrecks, rescues at sea, fierce winds, angry waves, unsuspected currents and treacherous shoals are described in matter of fact language or in prose that leaves little to the imagination.

One familiar with maritime history will recognize the names of many vessels and many famous mariners in the Maury logs. William S. Sebor contributed abstract logs from the *Prince Albert* and the *Yorktown.* Samuel Samuels, 'who rejoiced in his own toughness' sent in a long series for the clipper *Dreadnought.* Joseph C. Delano is represented by abstract logs from the record making voyage of the *Columbia* and David G. Baily by the abstracts from the fastest of all packets, the *Yorkshire,* which broke the record for speed previously held by Delano. Nathaniel B. Palmer selected by a recent writer as 'the outstanding captain among the many thousands who sailed out of New York' co-operated with Maury by sending abstracts from the *Oriental.* Robert H. Waterman, a captain who

gloried in the epithet 'Killer,' is represented by abstracts of, among others, the *Sea Witch*, a vessel said to have broken more speed records than any other American ship.[6]

The great clippers designed by Donald McKay are represented by the *Stag Hound, Westward Ho, Great Republic, Lightning,* and *Flying Cloud.* Most of the famous record voyages to California are preserved in their abstract logs, such as the famous eighty-nine day voyage of the *Flying Cloud* in 1851, J. P. Cressy, in command, and of her later voyage in 1854 when she bettered the earlier record by thirteen hours. Lauchlan McKay, Donald's brother, contributed the full log of the maiden voyage of the splendid *Sovereign of the Seas* when she logged over four hundred nautical miles in one day, a run not often surpassed. Philip Dumaresq established records with the *Surprise* and sent in abstracts of the voyage. Robert W. Foster, famous master of many vessels contributed garrulous logs from the *Garrick,* the *Roscius,* and the *City of Pittsburgh*; this last vessel was destroyed by fire soon after Foster had entertained aboard her the Emperor and Empress of Brazil of whom he writes at great length.

Even while the clipper era flourished, abstracts began to come in from steamships and as they began to increase in numbers the clippers began to decrease. There are abstracts from the pioneer steam vessels like the *Great Western* and the *Great Britain,* the famous Cunarder, *Europa,* the Hamburg-American, *Bremen,* and many others. There are abstract logs from whalers, from barks and brigs and from naval vessels of the United States; there are logs in Dutch, Spanish, German, Chinese, and from vessels of all nations.

In addition to original abstract logs kept aboard vessels, Maury's agents made abstracts from collections of old logs, some of them dating back to the eighteenth century. Some original and complete logs also found their way to the Observatory as gifts. For instance, the original logs of the ship *Bengal* on the Amsterdam, Canton, Philadelphia run in 1805-1806 contain interesting accounts of the attempts made to violate the British orders in council. Some of these original logs, as that of the ship *John* for a voyage in 1797-1799, contain a few examples of exquisite pen sketches with which so many old logs are illustrated. There are many logs from naval expeditions.

Probably nowhere can a fuller picture of maritime life and government aid to shipping be found than in the archives relating to Matthew Fontaine Maury.

[6] Robert G. Albion's *Square-Riggers on Schedule* and *The Rise of New York Port, 1815-1860* (New York: Charles Scribner's Sons, 1939) and Samuel E. Morison's *Maritime History of Massachusetts, 1783-1860* (Boston: Houghton Mifflin, 1921) have been used in identifying vessels and their masters.

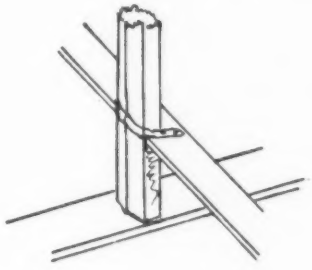
Notes

The Potomac Long-Boat

In the days before central heat and cooking by manufactured gas became commonplace, wood burning fireplaces and ranges reigned supreme in most city houses. The quantities of cord wood consumed were astounding, and the facilities needed to transport it from the woodlots into town were prodigious. Where navigable water was available, fleets of vessels were used. Eventually local types generally known as 'wood boats' were evolved. These craft were so humble in their design and construction that little or nothing of their nature has been recorded. Fortunately Henry Hall in the course of his search for materials on which to base his *Report on the Shipbuilding Industry* described one and made measured sketches of another. Part of his observations were published in the *Report*, pages 128-129, but a larger portion is to be found only in Hall's manuscript notebook, *Ship Building in the United States*.[1]

Hall called the craft 'long-boats' and said that they were 'of a style peculiar to Chesapeake bay and the Potomac river.' Generally the long-boat was 'an undecked center-board schooner with two fore and aft sails and a large jib. They were shallow, flat on the floor, had round sides, straight bodies, and sharp bow, with quarter decks and cabins aft, drew only 18 inches of water light and 3 feet loaded and will carry from 60 to 80 cords of wood each.'

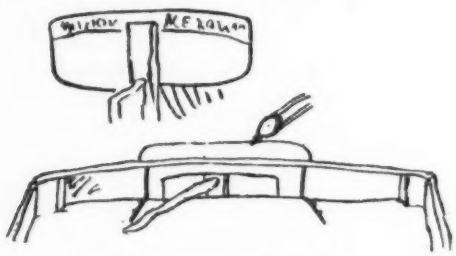
The boat which Hall saw at an Alexandria wharf — probably the *Union* — measured 77 feet on deck by 14½ feet beam and 31 inches in the hold, 25 16/100 tons. Her frames were unusual in structure. They were bent single timbers 5 by 3 inches, spaced 17 inches apart, extending from gunwale to gunwale. To get the curve the timber was not steamed but a kerf was sawed horizontally to a point below the turn of the bilge. These split ends were bent to the desired curve to form the bilge and top timbers. The keelson was 11 inches by 3½ inches and there were two sister keelsons 7 inches by 7 inches. The boat was unceiled. Deck beams were spaced four feet apart, with a fore-deck 12 feet long. Abaft the fore-deck there was a hatch 52 feet long with a coaming made of 17 by 3 inch stuff, 13 inches high above the deck. Stanchions were fixed at the fore- and after-ends of the hatch. The quarter-deck, with a trunk cabin 8 feet 8 inches long by 2 feet 9 inches high above the planking completed the deck plan. Gangways, or side decks, 18 inches wide extended from the fore to the quarter-deck. Her spars were as follows: Foremast 48 feet long, 10 inches diameter 20 feet from stem; fore-gaff 15 feet 4 inches long; fore-boom 26 feet. Mainmast 49 feet 11 inches diameter; gaff 17 feet; boom 37 feet 6 inches. Bowsprit outboard 6 feet. The centerboard well was 15 feet long 4 feet high and 10 inches thick overall outside. Its position is not given nor is that of the mainmast, but if Chesapeake Bay practise was followed the fore-boom cleared the mainmast by but a few inches and the centerboard well was set in immediately forward of the mainmast. Hall's sketch shows the method of supporting



[1] Penobscot Marine Museum, Searsport, Maine: see The American Neptune, I (1941), 87-88.

the mast at the 'partners.' This is simply an iron strap forged into horseshoe shape, with the two horns bolted to the proper deck beam. A 3-inch high monkey rail ran from the stem to the fore-end of the hatch and a 6-inch rail ran from the aft-end of the hatch to the transom.

The boat was painted green in a 12-inch band along the waist with a brown stripe above and below it. Above the stripe there was a 6-inch white band. Below the brown stripe Hall says she was 'white or a very light pink.' Probably the latter, known locally as 'flesh color,' was the correct color. The name was painted in black on the stern.



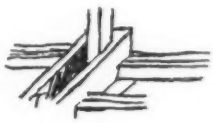
The second boat Hall found under construction in June 1881 at the Alexandria (Virginia) Marine Railway and Shipbuilding Co. He surveyed her in detail, even taking offsets 'clumsily measured with a pocket rule, but still very close.' These have been translated by Edward G. Brownlee into the drawings reproduced herewith. It should be noted that this boat is somewhat different from that described above. Because there are several doubtful points about her construction, no attempt to interpret Hall has been made. Possibly if photographs of this type of vessel can be found the doubtful points can be fixed.

Hall said of the second boat.

'82′ over all, 77′ keel, x 23′ x 3′ 10″ Frames not bent, but carved; oak. double frames, 6″ moulding wise and 3½″ + 3½″ siding. Each frame has a floor crossing to the turn of the bilge, and is otherwise arranged, thus

8 pieces in the frame. 42 [*sic*] frames in all, no 1 stepping 21½′ from the heel of stem. Spacing 21″.

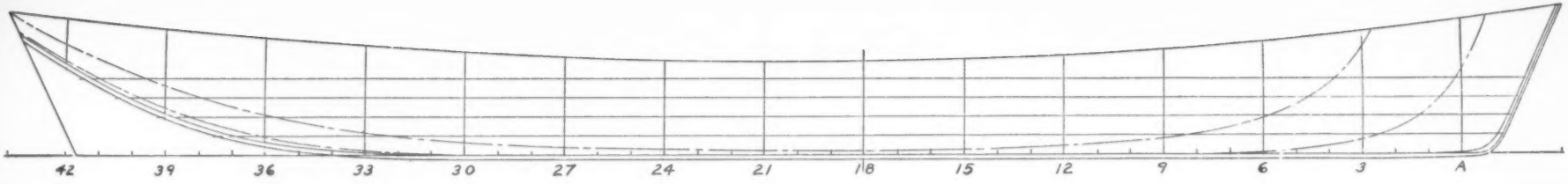
'The keel is 15″ x 6″ and flat, the center board being let through the keel. This timber narrows at the ends, to 7″ at the stern post and about that at the stem. Vertical scarphs. Center board keelson 15″ x 10″. Center board well 23′ x 4½ x 3½″ inside. The keelson for this well extends from the 12th to the 25th frame. Main keelson 15″ x 4″. Side keelsons, 7″ x 7″. One bilge streak about 5″. Clamps. No ceiling.

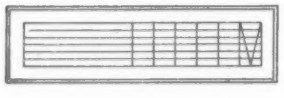


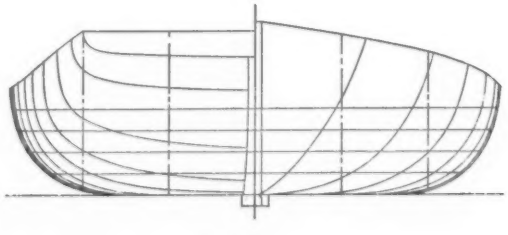
'Stem hewed from 14″ stuff, moulding edge.

'Stern post 8″ x 5¾″ 5½ feet high. Transom 13″ x 6″ rising 4″ above the dead wood. The deadwood aft reaches to the 32d frame.

'Measurements. Perpendiculars dropped at extreme points of bow and stern. 82′ between perpendiculars. Frame 1 Seven feet from fore perpend [icular]. Frame 43 [*sic*], 3′ from after one. Four water lines 1 foot apart. Square stations every third frame. Heights of plank sheer from base line, wh[ich] is rabbet of keel:



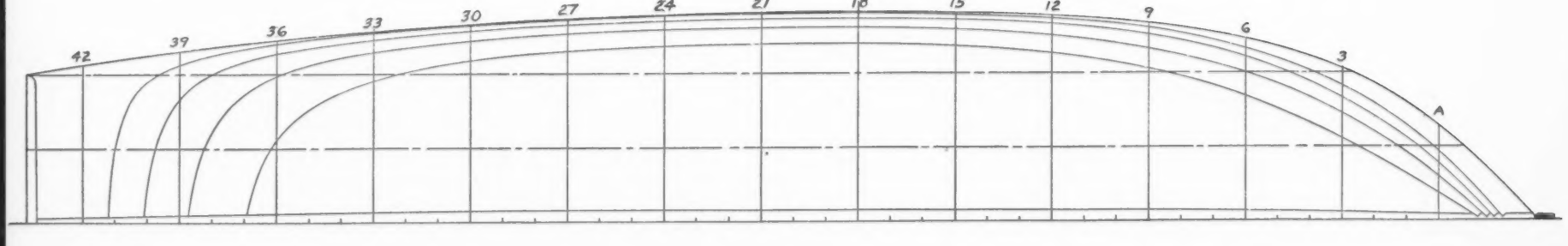




LONG BOAT

DRAWN FROM OFFSETS
TAKEN BY HENRY HALL
AT ALEXANDRIA, VA.
JUNE 9, 1881

Edward S. Brownlee - 1941



Fore perpendicular 8′

Frame A	7¾	Frame 12	5¼	Frame 30	5⅝
1	7	15	5	33	5¾
2	6¾	18	4⅞	36	6 3/16
3	6½	21	4⅞	39	6⅝
6	6	24	5	42	7 3/16
9	5½	27	5¼	Perpend	7⅝

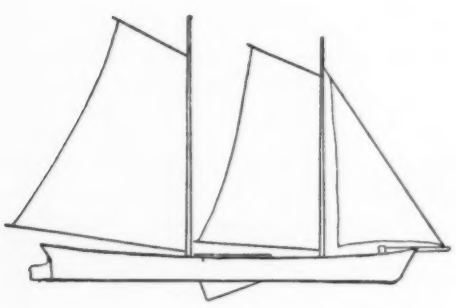
'Heights from Keel to curve of dead-wood aft.

Frame		Frame		Frame	
33	1/8 foot	35	7/16 foot	39	2 3/16
34	¼	36	1/16	42	4 1/16

To junction of knuckle line with plane of stern, 6⅜.'

From [*sic*] aft perpendicular to endings of water lines in sheer plan:

Waterline 4	1¾ feet	Waterline 2	2⅝
3	2¼	1	3⅛



Widths in half breadth plan to outside of frames at square stations, clumsily measured with a pocket rule, but still very close:

Frame	1st W.L.	2nd W.L.	3rd W.L.	4th W.L.	Plank Sheer
A	1¾	2⅜+	3⅛	3¾	5¼
1	2¾	3¾	4½	5⅛	6⅜
2	3¾	4 1/16	5⅝	6¼	7⅜
3	4 1/16	5¾	6⅝	7¼	8¼–
6	6 1/16	8 1/16	8⅞	9 1/16	9⅞
9	8⅜	9⅜+	10⅛	10½	10⅝
12	9⅛	10 1/16	10 1/16	11	11¼
15	9½	10⅜	10 1/16	11 3/16	11 5/16
18	9⅝	10½	11	11¼	11⅜
21	9 9/16	10½	11	11 3/16	11 5/16
24	9½	10⅜	10⅞	11⅛	11 3/16
27	9¼	10 3/16	10⅝	10 1/16	11
30	8¾+	9 1/16	10 5/16	10⅝	10 1/16
33	7⅝	9 3/16	9⅞	10¼	10 5/16
36	4⅜	7⅞	9⅛	9⅝	9⅞
38	–	4⅞	8–	9	9⅜
39	–	–	6⅝	8½	9¼
40	–	–	1 1/16	7 9/16	9
41	–	–	–	3⅞	8¾
Perpendicular					8

Has cutwater and head rails.

From fore perpendicular to endings of water lines:

4th W.L.	1¾	2d W.L.	2⅝	Masts	55 ft
3d	2¼	1st	3⅛		56 .

This long boat will have a forward deck of about 12 or 15 feet. Decking at the sides either 4′ or 8′. Hatch coaming will go aft and take in the house, so as to give more strength.

Many long boats have two shrouds forward and only one aft.'

Hall described the method of lading a long-boat in these words: 'The cord wood is laid fore and aft on the frames until the hold is full, and the gunwales are then piled up with sticks laid transversely. The space within is then filled up with sticks, laid athwartships as high as convenient.'

Aside from the phrase 'many were built,' no estimate of the number of these vessels is given either in the published report or in the notebook. Nor is any idea of the cost of these long-boats included. Hall's statement regarding their qualities, however, is very definite, 'They are fit only for river use, being too clumsy for rough water.'

M. V. BREWINGTON

First Four-masted Schooner

The 995-ton schooner *Wm. L. White*, built at Bath, Maine, 1880 by Goss, Sawyer and Packard for J. B. Phillips of Taunton, Massachusetts, is usually credited with being the first four-master in New England. The story is told that she was planned for three masts, but converted on the stocks to four.

Supporters of the *White* have overlooked the prior claim of the schooner *Weybosset*. According to the 1882 volume of *American Lloyd's Register*, *Weybosset* was a 629-ton four-masted schooner built as a steamer by Greenman of Mystic, Connecticut, in 1863, and rebuilt as a schooner in September, 1879, for Boston owners. Doubtless the builders of the *White* were aware of this vessel, which demonstrated the feasibility of a four-masted rig.

The Great Lakes, of course, were far ahead of the Atlantic Coast in the matter of putting masts in schooners. The Historic American Merchant Marine Survey lists plans of the four-masted schooner *Lizzie A. Law* of 1875, and there is nothing to indicate that she was the first of her type.

J. LYMAN

Three Watercolors by Cornè

Upon the death of Richard Dana, a descendant of Captain Luther Dana, three hitherto unrecorded ship pictures by Michele Felice Cornè[1] have passed to another descendant of Captain Dana, Benjamin R. Kittredge, Esq., of Carmel, New York, while the miniature of Captain Dana, also by Cornè and with a ship in the background, goes to his descendant Mrs. Aubrey Gould of Great Neck, Long Island.

Two of these show Elias Hasket Derby's ship *Mount Vernon*. In Mr. Peabody's paper about her voyage[2] it is said that in the latter part of April 1800 the *Mount Vernon*, *Cruger*, 'and the remaining polacca' sailed from Naples, Michele Felice Cornè being on board the *Mount Vernon*.

But one of these pictures tells us by its title and legends that there were four vessels. The title is 'The Mount Vernon, Lucia, Nancy, & Cruger of Salem departing from Naples, year 1800,' and in the upper right corner a legend says:

'No. 1. Mount Vernon, Commander Derby.

No. 2. Lucy, Captain Bruce.

No. 3. Nancy, Captain Dana.

No. 4. Brig Cruger, Captain Barton.'

The second is a picture of the *Mount Vernon's* engagement on 31 July 1799 just off Gibralter, a subject treated by Cornè in three watercolors in the Peabody Museum of Salem. As compared with the Peabody Museum picture (M4143) which is reproduced in colors on the 1941 calendar of the Naumkeag Trust Company, the following are the differences:

Captain Dana seems to have preferred more smoke and the *Mount Vernon's* lower sails are almost wholly obscured.

[1] Collotype reproductions of these three pictures have been made by the Meriden Gravure Company. Each plate is the size of the original water-color and includes a reproduction of the miniature. They may be purchased from Richard W. Hale, 60 State Street, Boston, for $1.50 each, or $3.00 for the set of three, postpaid.

[2] Robert E. Peabody, 'A Voyage to the Mediterranean during the Napoleonic Wars,' *Publications of The Colonial Society of Massachusetts*, XXXII (1937), 505-514.

Gibralter is much nearer, and only two opponents, not three, are seen engaging.

The third is 'Ship Recovery of Salem owned by Honourable Elias Haskett Derby, Esq. Luther Dana, Commander, returning from Mocha in the Red Sea. Corney (*sic*) pinxit.' This has a date defaced or obscured, but in the 1800's. Luther Dana's journal of this voyage is in the Peabody Museum of Salem. As to Captain Luther Dana himself see also a query in this issue.

RICHARD W. HALE

The *HORNET* Journals

The recent publication of a novel based on the epochal voyage of the clipper *Hornet's* long-boat in 1866 and reviewed elsewhere in this issue, makes it appropriate to note here the contemporary source material extant.

Commanding the *Hornet* was Captain Josiah Angier Mitchell and there were two passengers included in the fifteen men who survived the 43-day 4,000 mile open boat voyage from the point[1] where the *Hornet* took fire to Laupahoehoe, Island of Hawaii.

The Captain and both the passengers wrote daily entries in pencil in small cloth-bound journals which they somehow managed to keep dry inside their tattered clothing. These three books are preserved by their descendants and photostat copies are located in The Mariners' Museum Library, Newport News, Virginia. This organization has permission from the present owners to use the material and contemplates in the near future the publication of all three accounts within the same cover under the editorship of the undersigned.

The following chronology is of value to an appreciation of the written sources on the disaster:

15 January — *Hornet* leaves New York

18 to 28 March — Rounding Cape Horn, 50° S. Atlantic to 50° S. Pacific

3 May — *Hornet* takes fire; crew embarks in small boats

15 June — Longboat arrives Laupahoehoe, Hawaii

[1] Lat. 2° 20′ N. Long. 112° 10′ W.

A description of the three diaries follows: (all are size 3¼″ x 5½″)

Journal of Capt. Josiah A. Mitchell, Freeport, Maine

Pocket Diary for 1866, Published annually by Bailey and Noyes, Portland.

[Date entries of eight lines each are printed three to a page. Space for memoranda, cash accounts, and so forth, is given in the back. Capt. Mitchell wrote an entry for virtually every day in the entire year. The complete diary was privately printed in Hartford, c.1924.]

Journal of Henry Ferguson, Stamford, Connecticut

Daily Memorandum Book for 1866 . . . , Published annually by Francis & Loutrel, New York.

[Date entries of twenty lines each are printed one to a page. Space for miscellaneous entries is given in the back. Henry Ferguson contributed an entry for practically every day from January to August. This part of his journal was privately printed in Hartford in 1924.]

Journal of Samuel Ferguson, Stamford, Connecticut

Identical memorandum book.

[Samuel Ferguson wrote more fully than his brother but omitted several days. No entries recorded after July. Included in above mentioned privately printed volume are Samuel Ferguson's entries covering only the long-boat voyage and arrival, i.e. 3 May — 25 June.]

Miscellaneous letters descriptive of the event written by all three above diarists have been preserved.

Since Third Mate Thomas and the *Hornet's* seamen were brought from Hilo to Honloulu the first printed accounts were based on their testimonies. Thus, the Honolulu *Pacific Commercial Advertiser* for 30 June 1866 prints a story from the testimony of Thomas and Seaman Clough.

Mark Twain was at Honolulu when the *Hornet's* long-boat arrived. He furnished the following printed accounts:

Sacramento Daily Union, 19 July 1866.

[Account dated 25 June 1866 from Honolulu, covering the disaster per the testimony of Third Mate John S. Thomas and the seamen whom Clemens visited in the hospital. This was his famous newspaper 'scoop,' the first complete account to reach the continent of North America. It served as the basis of all first newspaper accounts and also of the *Harper's Weekly* illustrated article of 29 September 1866. Reprinted in Mark Twain, *Letters from Honolulu Written for the Sacramento Union* (Honolulu, Thomas Nickerson, 1939).]

Harper's New Monthly Magazine, New York. December 1866 (Vol. 34).

[Account of disaster which quotes liberally from extracts of the three above journals made by Clemens when returning to San Francisco with the Captain and the two Fergusons.]

Century Magazine, New York. November 1899.

'My Début as a Literary Person'

[Similar account with same quotations. It is significant to note that Clemens considered the reporting of this event as giving him his start in the literary world. Reprinted in Harper's collected works of Mark Twain in the volume entitled *The Man that Corrupted Hadleyburg and Other Stories* (New York, 1900).]

The following biographical sketches are of value:

Wide World Magazine, London. September 1900 (Vol. 5).

'The Lone Cruise of the *Hornet* Men' by Leigh H. Irvine of San Francisco.
[Subtitled 'The Personal Narrative of Frederick Clough.' Clough was a seaman on the *Hornet*.]

Overland Monthly and Out West Magazine, May 1924.

'Yankee Captain and Southern Pilot,' by Harold Waldo.
[Biographical sketch of Capt. Mitchell.]

Three Centuries of Freeport, Maine, by Florence G. Thurston and Harmon S. Cross (Freeport, 1940).[2]

[Biographical sketch of Captain Mitchell is included.]

[2] Reviewed in THE AMERICAN NEPTUNE, 1 (1941), 100.

Other secondary accounts, both good and bad, based on one or more of the above sources (none on all) are too numerous to mention.

The Seamen's Church Institute of New York possesses an oil portrait of the *Hornet* painted presumably shortly after her building in 1851. This came to the Seamen's Church Institute through descendants of Captain Robert Benson, who commanded the *Hornet* in 1857 and 1858, prior to Mitchell's captaincy. It was restored through the kindness of Mr. Samuel Ferguson of Hartford, a son of the diarist Henry Ferguson.

ALEXANDER CROSBY BROWN

PUBLICATION OF SHIP REGISTERS AND ENROLLMENTS

AMONG the most valuable records of the Federal Government which were found in custom houses throughout the country by the Survey of Federal Archives, a nation-wide WPA project sponsored by The National Archives, are certificates of registry and enrollment of American vessels. The former were issued for vessels engaged in foreign trade and the latter for those engaged in the domestic trade. On both were recorded the name of the vessel, its rig, its hailing port, the date and place of its building and sometimes the name of its builder, its measurements and other distinguishing features, the names and residences of its owners and masters, etc.

Examination of compilations of information from registers for Salem and Newburyport, published by the Essex Institute, lead to a decision to undertake similar compilations by certain state projects sponsored by The National Archives. Accordingly, on a somewhat experimental basis, there was issued by the Massachusetts project in 1938 a mimeographed volume entitled *Ship Registers of the District of Barnstable, Mass.*, 1814-1913. Other volumes, for Plymouth, 1789-1908, Dighton-Fall

River, 1789-1938, and New Bedford, 1796-1865, were subsequently issued by this project.

In general conformity to instructions prepared in the Washington office, work is now in progress on compilations of information from both registers and enrollments in Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, Pennsylvania, Louisiana, California, and Oregon. For each customs district or port of documentation a separate volume or series of volumes is planned. In these, arranged alphabetically by names of vessels and chronologically thereunder, all information from both types of documents is combined, so as to give, insofar as documentation in a particular district or port is concerned, a complete history of each vessel. Where possible, references to documentation in other districts or ports are given. Complete indexes of personal and place names constitute valuable parts of these volumes. When gaps are found in the files in local depositories, the Historical Records Survey of the District of Columbia assists in furnishing information from the extensive files of registers and enrollments in The National Archives. Requests for copies of these volumes should be addressed to the Administrator of the Work Projects Administration of each state concerned.

PHILIP M. HAMER

The *ANTELOPE* Located

Having devoted much time to work on the union 'log' of 900 individual American vessels appearing in Appendix 4 of *Clippers and Consuls*,[3] my wife, Helen Ely Griffin, was quick to note the following sentence in remarks on the *Antelope* in Cedric Ridgely-Nevitt's article 'Auxiliary Steamships and R. B. Forbes,' in the first number of The American Neptune, page 57: 'Nothing is known of her career.' This deficiency of information is partially remedied by material from pages 388 and 394 of the book mentioned.

The *Antelope*, 415 tons, of Boston is described in consular records as a steamer, built at the same port in 1853 or 1855 (apparently the latter year) for R. B. Forbes and others. At different times her masters were E. Mellus (unless the doubtful handwriting is to be given the uncomplimentary reading of 'Nullus'), F. Shaw, and D. H. Lynch. Voyages noted, 1856- 1860, follow, subject to explanations given in *Clippers and Consuls*, 384-387. The letter 'x' refers to the number of times a year the vessel was observed in a given port.

Year	Date, or No. times	Port	From	To
1856	6x *	Shanghai	Hongkong	Hongkong
	3x †	Foochow	Shanghai	Hongkong
	6x	Hongkong		
	2x	Canton	Foochow	Foochow
1857	3x	Hongkong		
	2x	Shanghai	Hongkong	Hongkong
	May 31‡	Foochow	Shanghai	Hongkong
1858	Jan. 2	Shanghai	Hongkong	Hongkong
	Jly. 18‡	Canton	Hongkong	Hongkong
1860	Aug 10	Canton	Hongkong	Hongkong

* *Cargo In:* Coal; mdse. *Cargo Out:* Gen'l mdse.
† *Cargo In:* Passengers. *Cargo Out:* Passengers.
‡ *Cargo In:* Ballast. *Cargo Out:* Ballast.

The manuscript records from 1861 on might yield later information concerning voyages, sales, and owners.

[3] Eldon Griffin, *Clippers and Consuls: American Consular and Commercial Relations with Eastern Asia*, 1845-1860 (Ann Arbor: Edwards Brothers, Inc., 1938). Appendix 4 is a 'List of American Vessels Appearing in Ports of China (with Hongkong and Macao), Japan, and Siberia, 1845-1860, with Descriptive and Analytical Data (Tonnage, Cargoes, Masters, Destinations, etc.), in Three Parts, with a Supplement.' It is based chiefly on the extensive manuscript reports made periodically by consular officers and gathered in the archives of the Department of State; these little used materials form a vast mine of specific information on ships and other subjects. There are entries for three different vessels named *Antelope*.

Mr. Ridgely-Nevitt's article also notices the *Edith* and the *Midas*. Some of their voyages are given, in the above form, in *Clippers and Consuls*, 389 (*Edith*, 1845), and 390 (*Midas*, 1846, Hongkong, Canton, Manila, and, probably, Shanghai, but not 1848, an entry doubtless referring to the whaler *Midas* of New Bedford). Two of the masters of the former were named Lewis and Johnson, and Captain Poor was at one time in command of the *Midas*. This vessel attracted much attention in China.

ELDON GRIFFIN

Liverpool Ships Built at Newburyport

The Shipping Registers at the Liverpool Custom House contain the following record of ships built at Newburyport, Massachusetts, in the second quarter of the eighteenth century, which were owned and registered at Liverpool.

Charlton, square-sterned ship. Built Newburyport 1739. Registered Liverpool 22 September 1744. Master: Timothy Wheelwright. Owners: Benjamin Holme, William Whaley, William Topham, John Gardner, Robert Hallhead, merchants of Liverpool.

Enterprize, snow, 50 tons. Built Newburyport 1740. Registered Liverpool 1744. Master: Jno. Thompson. Owners: Potter Fletcher, James Pardoe.

Middleham, square-sterned snow. Built Newburyport 1742. Registered Liverpool 4 November 1749. Master: John Welsh. Owners: Jno. Gildart, Richard Gildart, George Gildart, merchants of Liverpool.

North Carolina, brigantine, 75 tons. Built Newburyport 1743. Registered Liverpool 1744. Master: James Nottingham. Owners: James Rowe, Bryan Blundell, merchants of Liverpool.

Monmouth, snow, 80 tons. Built Newburyport 1744. Registered Liverpool 1744. Master: Henry Twentyman. Sole owner: Thomas Backhouse.

Telemachus, snow, 140 tons. Built Newburyport 1747. Registered at Liverpool 1748. Master: Timothy Wheelwright.

Pemberton, round-sterned ship, 250 tons. Built Newburyport 1748. Registered at Liverpool 4 April 1750. Master: Robert Grayson. Owners: James Crosbie, Bryan Blundell, Richard Blundell, James Shaw, John Backhouse, merchants of Liverpool.

The Timothy Wheelwright shown as master of the ship *Charlton* and snow *Telemachus* is without doubt of the same Newburyport family as the famous William Wheelwright, mentioned in my *Steam Conquers the Pacific* (London: Hodder and Stoughton, 1940). Timothy Wheelwright apparently settled in Liverpool for a time. In 1749 he was master and part-owner of the snow *Hilary*, built at Liverpool 1746, and in 1753 he is shown as master of the snow *Herring*, built in New England in 1752 and owned by Thomas Johnson and Company of Liverpool. Timothy Wheelwright was married on 7 October 1744, by license, at Childwall Church, still standing on the boundary of Liverpool. He was also master of the *Molly* (employed in the slave trade) when she was taken by the French in 1758, while on passage from the Windward and Gold Coast, in the 'middle passage' and carried into Santo Domingo.

Many of the owners of the Newburyport-built vessels were notable citizens of Liverpool. Bryan Blundell was the founder of the Bluecoat School. Blundell, Crosbie and Richard Gildart were Mayors of Liverpool.

ARTHUR C. WARDLE

Documents

John Barry to the Navy Board of the Eastern Department

[Barry Papers in the Hepburn Collection]

Capt Barry's Defence of the *Raleigh*[1]

Friday September the 25th 1778 at 6 A.M. weighed Anchor in King Road Boston Harbour and sail'd from thence, between 7 and 8 o'clock the Pilot left us, we then got the top gallant yards up bore away E. b S. the wind N.W. set top gallant and steering sails qr. about Noon Cape Cod bore S. distance 10 or 12 Leagues, the Man at the Mast head call'd out two Sail bearing S.E. I then ordered the steering and small sails in to be ready to haul our wind should they prove Ships of force, In a short time we found they were Fishing Schooners by their appearance, in a very little time they call'd two sail more – bearing about S.E.b S distance 8 or 10 Leagues, we soon perceived them to be two Large Ships, one standing to the Northward the other to the Southward, by their largeness and behaviour I. took'n them to be British Cruisers,[2] I then haul'd the Ship by the wind to the Northward in hopes to get clear of them we at that time being a great distance to windward, When the Ship that was standing to the Southward got almost out of sight we perceived she tacked and gave us Chase along with the other, they kept their Course after us, we close upon a wind to the Northward, at Night we lost sight of them, and they to all appearance gained nothing of us the whole day, Night coming on the wind grew light and variable, I embraced every opportunity to get in with the Land and out of sight of the aforesaid Ships.

Saturday the 26th at 7 A.M. saw the aforesaid Ships, and a Brig: and Schooner bearing about S.S.E. light airs at S.E. or S.E. by S the Brigg: we took to be that which sail'd in company and was very near the first of the Night, after some time we saw the Brigg: stand to the Eastward and the Schooner speak to one of the Ships, which partly convinced me the Brig had been taken in the Night and that the Schooner was Tender to one of the Ships,[3]– a few Minutes after we heard several guns fire and supposed them Signals from one of the Ships they being at that time a great distance a stern and as near as I can remember bore S. or S. b W., in the afternoon the wind came to the Westward and about 4 P.M. lost sight of the said Vessels, we still continued our course for the Land at 6 P.M. bore N. b. W. distance 6 or 7 Leagues the wind about W. and a 5 or 6 knot Breeze, I thinking they had quitted Chasing of us, as I could not perceive they gained anything the whole time, ordered the Ship to be kept away under a moderate Sail for fear of falling in with them in the Night and putting us in Confusion, the Ship being ready for Action and Men at their Quarters from the first of their Chasing us, We steered E.N.E. by the

[1] The Continental frigate *Raleigh*, of twenty-six 12 and six 6-pounders, John Barry commanding. The document is Barry's official report to the Navy Board at Boston upon his arrival there after the loss of the *Raleigh*. The Board, on 7 October 1778, reported to the Marine Committee that 'though he has lost his ship, he has gained laurels for himself and honour to his country; perhaps no ship was ever better defended. . . . Capt. Barry's conduct is highly approved of here, and that his officers and men are greatly pleased with him.'

[2] The larger ship was H. M. S. *Experiment*, of fifty guns, Sir James Wallace commanding, and the smaller, H. M. S. *Unicorn*, of twenty-two guns, Captain John Ford.

[3] The schooner was the *True Blue*, tender to H. M. S. *Rainbow*, and was on a cruise south out of Halifax.

Compass till Midnight going 5 or 6 knots, at Midnight we steered E.S.E. day beginning to appear I ordered all Sails to be handed 'till Sun rise at that time nothing in sight we made all the sail we could and steered S. E. b E. in order to keep clear of Cape Sable at half past nine A.M. the Man at the Mast head call'd out two sails bearing about S.S.W. We soon saw them from the Quarter Deck and found they were Ships standing for us the wind then at W. I immediately wore Ship and haul'd the Wind to the N.N.W. with all the Sails the Ship could bear. At 2 P.M. or thereabouts we saw the Land a head we still continued our Course and the two Ships in full Chace, one of them which appeared the smallest came up with us very fast the other kept her distance, — when we got near the Land so that any body that had knowledge of it might tell where we were, I asked both Officers and Men if they knew anything of it, and to my great Grief I found there was not one on Board was acquainted with it, some of them said if we were 15 or 20 Leagues further to the Westward they could carry her into a good Harbour supposing the nearest Land to be the place they took it to be, but was unacquainted with any Harbour near or thereabouts, as soon as I got close in with the Land, which proved to be desolate Islands 12 Leagues from the Main and not a Tree on them,[4] the smallest Ship some distance a Stern and on our weather Quarter withall, I thought it most prudent to Tack to the Southward in hopes to get to the Westward and make a Harbour before the Ships could come up At 4 P.M. Tacked and before 5 the smallest Ship crossed us within Gun shott I found we were a Match for her and ordered the Continental Colours to be hoisted and gave her a Gun, she then up St. Georges Ensign and gave us a Broad side which we returned, in Crossing each other we exchanged two Broad sides which did little or no damage on either side, as soon as our Colours was hoisted I ordered the Main Sail haul'd up in order to right the Ship it then blowing a fresh Breeze (and I obliged to carry all the Sail I could to keep our distance with the large Ship which proved to be a two Decker), shortly after by some unforseen accident our fore top mast went over the side, and with it the Main top gallant mast Jebb and fore stay sail, I then ordered the Main tack on Board and set the Main Sail, as soon as the Frigate (which she proved to be of 28 or 32 Guns) could fetch us she tacked and soon ranged up alongside when an engagement ensued, when we got our Main Sail set I ordered the Wreck to be cut away, the engagement being very warm prevented getting clear of the Masts and Sails then alongside so soon as I could have wished and rendered four of our Guns useless for some time, however we got clear of the wreck and the Enemy drop'd a Stern a small distance but soon shot up again, being disabled so much I thought it impossible to get clear with my Ship therefore was determined to Board the Enemy if possible and take her before the other could come up, as soon as she ranged up-alongside it then being pretty dark, I ordered the helm aweather and thought to Run her a Board but perceiving my intention and having the command of his Ship shot a head and went to windward and continued there the whole of the Engagement, which lasted with him about seven Hours, as soon as I found he had got to windward of me, and no possibility of bringing him to a close Action, I thought it most prudent to wear the Ship and Run her on Shore on any place so that She or the People might not fall into the Enemys hands, about an hour or better before we could get near enough to run the Ship on shore, the Frigate sheered off, much shattered, and I thought water logg'd keeping a Stern out of Gun Shott

[4] Seal and Wooden Ball islands almost due south of Penobscot Bay.

— shewing Signals for the Large Ship which I took to be signals of distress,[5]— Half an Hour before we could run the Ship on shore the two Decker came up alongside the Frigate under our Stern when they renewed the Engagement which lasted then half an hour before the Ship struck Ground and a Quarter of an Hour after, when they both sheered off and came to an Anchor about half a Mile a Stern of us.[6]

I must not omit Mentioning that our Main top sail was shattered very much and rendered useless upon which I ordered it cut from the Yard and was about bending-another, when they both coming up I thought it impossible to get clear at any rate and ordered the Men to lett it Stand.

As soon as the firing was over I thought it most prudent to get the Boats out in order to save what Men I could, it then being between one and two o'clock Monday A.M. and not a Man on Board knew what Island we were on or how far it was from the Main, but it proved to be rather a barren Rock than an Island 12 Leagues from the Main Land and the wind right a head which rendered it very difficult to get on Shore where any body lived, however we got the Boats out and saved 85 in Number and should certainly distroyed the Ship had it not been for the Treachery of one Jesse Jacocks a Midshipman who was left to set fire to the Combustibles while the Master with a Boats Crew waited alongside to take him in but instead of complying with his orders he put out all the lights in the Ship, daylight appearing the Master thought it most prudent to put off as they were within sight of the Enemy, about 11 o'clock A.M. about 140 of our Men were taken Prisoners[7] and about 3 P.M. they got the Ship off,[8] Monday night two of the Boats went on the Island and brought off 13 of the 85 before mentioned, the above island lies off the Bay of Penobscot and is call'd the Wooden Ball, almost a solid Rock some what short of a Mile in length and a quarter of a Mile wide at the broadest place.

The reason I could not tell how many of our Men were made Prisoners was because there was no return of the kill'd on Board.[9]

[5] From the log of the *Unicorn*: 'at ¼ before 6 the Chace crossed us to Windward, about ¼ Mile, hoisted American Colours, & began the Action with a Broad Side, which we return'd, and discover'd the Enemy's Foretopmast & Maintop Gallant Mast carried away. Do tack'd and continu'd the Action to Leeward, about 7 got close up to the Enemy, and soon after got the Weather Gage of her, when she bore up for some time, & then haul'd her Wind to the Northd in for the Land, about ½ past 9 having both the Main and Mizen Masts dangerously wounded our Stays & running Rigging much damag'd & the Ship making a good deal of Water; thought proper to drop on his Quarter, in order to secure the Masts clear her of Water, and refit (as well as possible) the running Rigging.' (Public Records Office, London, *Admiralty, Captains' Logs*, 51, 1017, part 7).

[6] From the log of the *Experiment*: 'at 7 a violent firing on board both Ships, ½ past 9 the firing ceased ½ an Hour, on which we fired several Signal Guns & was answered by the *Unicorn* with Lights & false Fires bearing N ½ E 3 Miles, at 10 the *Unicorn* still in Action, at 11 spoke her & found the Chace close by her, soon after got alongside the Chace, she gave us a Broadside, and we returned it, she then run upon the Shore, we being close to the Rocks, tacked & Anchored about ½ a Gun Shott from her, as did the *Unicorn* in 20 fathoms Water.' (Ibid., 51, 331, part 3.)

[7] According to the log of the *Experiment* the prisoners were First Lieutenant David Phipps and 133 men.

[8] The *Raleigh* was convoyed around to New York and subsequently taken into the British service.

[9] There were 235 men in the *Raleigh's* complement, of which 85 escaped with the captain, 134 were captured, and 16 were killed.

Contributed by William Bell Clark.

Queries

BARKENTINE *Leighton*, 1852. In the *Dictionary of American English* under *barkentine* is a quotation said to be from the *Boston Evening Transcript*, 1903, '6 Feb 22/2,' describing the *Leighton* of 1852 as the 'first barkentine ever built.' I am informed that the quotation cannot be located from the reference as given. Can any one furnish (a) the correct reference, (b) the context of the *Transcript* story, or (c) any further particulars of the *Leighton*?

J. LYMAN

CAPTAIN LUTHER DANA. The naval 'Battle of the Nile' was fought at Aboukir in Egypt on 1 August 1798. Among the manuscripts in the estate of a descendant of Captain Luther Dana, and in the *National Dictionary of American Biography* as part of the account of Luther Dana it is stated that:

> 'In command of a ship of eighteen guns he saw the French fleet at anchor in Aboukir Bay, and falling in with the fleet of Lord Nelson a day or two after he went on board the flagship and was able to give information which enabled Nelson to attack and destroy the fleet.'

Is this fact or fiction? If it is fact, what is the ship, the story, and the proof?

RICHARD W. HALE

EARLY PACKETS. John Smith (1722-1771) of Burlington and Philadelphia is credited by his grandson John Jay Smith with sailing 'the first line of packets to Europe' (*Recollections*, ed. E. P. Smith, 1892, p. 3), and, somewhat more moderately, by R. Morris Smith with owning 'the first line of regular packets trading between Philadelphia and Liverpool' (*The Burlington Smiths*, 1877, p. 118). Can anyone supply evidence which will corroborate, amplify, or disprove these statements?

FREDERICK B. TOLLES

GREAT NORTHERN STEAMSHIP COMPANY. I am gathering material for a history of the Great Northern Steamship Company, and in particular for a complete account of the *Minnesota* and *Dakota*. Information still required includes particulars of the cost of the vessels; an authoritative opinion on their engines and boilers; details of the *Minnesota's* career on the Atlantic; and a photograph of the wreck of the *Dakota*.

I would also like to know something about the Boston Steamship Company (or Tow Boat Company), and of the circumstances which led to the building of the *Shawmut* and *Fremont* (later the *Ancon* and *Cristobal*), which were operated in the trans-Pacific trade for a number of years in connection with the Great Northern Railway.

W. KAYE LAMB

NECKLACE. Sir George Nares speaks of a 'topmast head chain necklace' used 'to hang blocks for hoisting the topsail, jib, fore-topmast staysail and sometimes for the jib-stay'; also it was used for the hanging blocks of the topsail lifts. It was evidently an English rig. Was it ever used on American vessels? His diagram, Fig. 13 in the sixth edition of *Seamanship* (1882) is confusing. Is there any better diagram available?

EDWIN NEWELL RICH

SEA CHESTS. I am interested in collecting data of any description pertaining to sailors' sea chests (general construction, colors, kinds of knots in their shackles, design styles on the lids, etc.). I am also curious to know why some chests had a tumble home and others did not. I have read about sailors lashing their chests down in the course of a storm: just how and to what were the chests lashed? I have also been given to understand that it was a distinct breach of sailors' etiquette to lock their chests while at sea, every man being considered more or less

honest until found otherwise. Is this correct?

HENRY DARNELL, JR.

SHIPBUILDING. Does anyone know the whereabouts of a copy of the pamphlet *Some Memorandums by which it is attempted to be shown that an improved model may be adopted in the Construction of Ships* (n.p., n.d.), 7 pages, 4 plates.

M. V. BREWINGTON

SHIPBUILDING CONTRACTS. Can NEPTUNE's readers aid me in finding contracts for the construction of vessels in North America during the seventeenth and eighteenth centuries?

ADRIAN BLOCK

WHALING NAVAL AND MERCHANT VESSELS. I should like to correspond with a person who has accurate knowledge of the lay-out and appearance of New Bedford whalers of 1820-1840, and how they differed in detail from the whalers of 1880-1890, of which we have photographs to go by.

Does any reader have detailed knowledge of the small composite gunboats and revenue cutters built by the United States in the 1890's, especially the fitting of plating under the hull planking?

Can any reader tell me the source of the plan of a '330 ton merchant vessel of the early 19th century, length B. P. 108'-3¼"; breadth extreme 27'-6"; depth 12'-0"; length on keel 82'-0" ' which appears in E. Keble Chatterton, *Ships and Ways of Other Days* (Philadelphia: J. B. Lippincott, 1913-1924). These plans in appendix give outboard profile, deck, mid-section, stern, frame and plank expanded, but lack body plan. This plan would be an excellent subject for a built-up model, and would require a minimum of design and reconstruction by the modeler.

BRYANT K. ROGERS

Answers

COLUMBIAN COOPERAGE. It is unlikely that a barrel would be so tightly bunged that expansion or fermentation would burst the hoops. Both wine and water do expand in heat, but I cannot imagine why anyone would be afraid to go into the hold of a ship on account of the possibility of barrels bursting. If they did burst, they would not explode. They would simply distend until they gave at the weakest point and some liquid trickled out. Barrels will definitely not swell nor hoops burst if they are one-half empty, no matter to what heat they are subjected.

FRANK SCHOONMAKER

HAMPTON-HAMPDEN BOAT. Owning an old Hampton boat myself, and never having been able to justify the spelling 'Hampden' locally, I have recently talked to a number of fishermen around Portland about the boats. They all agreed that the early Hamptons were double-ended and of lap-strake construction, but they knew very little about when the first Hamptons were built or where the name came from. They referred me to an old-timer at South Harpswell, over eighty years old, who told me that at one time the fishermen had their boats built at Seabrook, New Hampshire, and sailed them down to Casco Bay. He too described these boats as lap-strake double-enders. From all the stories there seems to be no question but that all the early Hamptons were of this type. As Seabrook is only about five miles from Hampton, New Hampshire, this was the first indication I found which showed that the name might have come from the latter town. Later I found that Mr. Alfred Elden of Portland, writer of fish and boat stories, has some notes which he took during a conversation with Mr. David Perry Sennett of Bailey's Island, who was generally credited as being the 'father of the true type Hampton boat.' At that time Mr. Sennett was an old man, and had been building Hamptons for over thirty years. He said definitely, according to Mr. Elden, that the Hampton boat got its name from Hampton, New Hampshire, where the first boats were built. All Mr. Sennett's early boats were of this same familiar double-ended lap-strake construction, but later he built a square-sterned Hampton. Then in 1877 he built the first strip-planked square-sterned Hampton ever seen in Casco Bay. This boat was such a great improvement that practically all the Hamptons from then on were strip-planked and square-sterned. It is interesting to find that the name of boats built in Hampton, New Hampshire, stuck in spite of the fact that the boats, as they were developed in Casco Bay, were a far cry from the original type. As the development of the Hampton has been going on for the past eighty-five years or so exclusively in this relatively small bay, it is no wonder that today few suspect its name originated in Hampton, New Hampshire.

CHARLES P. EMERSON

HENRY HALL. Mr. Harry W. Baehr, Jr., of the *New York Herald Tribune* has very kindly contributed a copy of a typescript sketch of Henry Hall from the files of that newspaper, dated April 1893, and writes: 'Since Mr. Hall was then business manager of the *Tribune*, the sketch was doubtless prepared with care, and while it bears some marks of those "works of local piety" against which your publication has quite properly set its face, it should be factually accurate.' The sketch is rather too fulsome for complete quotation, but one passage throws some light on the origin of Hall's

Report on the Shipbuilding Industry. 'Always fond of the water, and of boats, one of his first impulses, after going to New York was to visit the wharves which lined the North and East Rivers and study the shipping. The prevalence of the English flag among the great vessels at the water front, and the scarcity of the American flag, set every drop of blood tingling in his body; and one day he called on John Roach, the great ship builder, to ask why the foreign flag had gained such an ascendency in the port. Mr. Roach took an interest in the young journalist at once; saw that he was in earnest; and aided him with the desired information; and the two men were firm friends until Mr. Roach's death. A pamphlet which Mr. Hall wrote on American Shipping, soon after, insisting on the development of the American merchant marine, and setting forth the reasons of its backwardness, attracted some attention, and led, after the election of 1880, to the unexpected offer to him, by Gen. Francis A. Walker, of the place of Special Agent of the Census on Ship Building. He accepted the appointment and left the *Tribune* for a year and over to visit the shipbuilding coasts and rivers of the country and obtain the statistics of that industry. Returning to New York, after a trip extending from Maine to Puget Sound, to write his report, he was offered the position of Business Manager of the *Tribune* by Mr. [Whitelaw] Reid. Accepting the place, he was obliged to prepare his report to the Government during the evenings, while spending every day at the *Tribune* office trying to master the details of the *Tribune's* great and complicated business organization.' The sketch mentions a history of Auburn, New York, and a history of the 3rd New York Artillery, which Hall published. The main facts agree with the brief account published in THE AMERICAN NEPTUNE, I (1941), 88, though there is considerable elaboration of Hall's industry and virtues —'Mr. Hall attributes his success merely to a good constitution and hard work'— and of his admiration for Whitelaw Reid.

Obituaries in the *New York Times* and *Tribune* of 7 February 1920 state that Hall died on the preceding day in Johns Hopkins Hospital, Baltimore, where he had gone for an operation which had been prevented by an attack of pneumonia; that, after leaving the *Tribune*, he had written *America's Successful Men, How Money is Made in Security Investments*, and many financial pamphlets, and 'for the last few years' had been president of the Fairfield Investment Company.

Mr. Vergil D. Reed, Acting Director of the Bureau of the Census, has kindly supplied photostatic copies of Hall's expense accounts as a special agent of the Bureau from 13 November 1880 to 31 July 1883.

Mr. W. J. Lewis Parker calls attention to Henry Hall's *The Ice Industry of the United States, with a brief sketch of its history and estimates of production in the different states*, published, like his *Report on the Ship-building Industry*, in the *Tenth Census of the United States* — 1880 (Washington, 1888), XXII, pp. vi, 43.

Mr. Richard S. Wormser states that Hall edited *The Tribune Book of Open-Air Sports* (New York, 1887), which was 'printed without type, being the first product in book form of the Mergenthaler (linotype) Machine.'

THREE-MASTED SCHOONERS. Any three-master prior to 1850 ranks as an early example. The following American vessels have been noted in this category:

1799 *Harmony*, Capt. Price, 'Danish bottom,' lost on passage New Haven-Surinam.[1]

1801 *Success*, West India trader.[2]

1804 *Urania*, Capt. Aldridge, of Norwich, Conn.[2]

1806 *Nimrod*, *Orestes*, *United States*, 'occasionally making foreign voyages.'[2]

1806 *Flying Fish*, prize, Baltimore-built; lines taken off at Portsmouth Dockyard.[3]

1807 *Asenath*, Capt. Rosseter, China trade.[2]

1813 *Stark* or *General Stark*, privateer, built 1813 at Salem, 'lateen rigged.'[4]

1823 *Spy*, 91 tons, built 1823 at Essex, Mass., pink-stern, voyaged to Zanzibar.[5]

1827 *Ferrata*, outfitted 1827 at Baltimore.[6]

1831 *Aurora* or *Amora*, 147 tons, built at Ellsworth, Maine, 1831.[7, 8]

1833 *Fame*, 130 tons, built at Ellsworth, Maine, 1831 or 1833.[7, 8]

1833 *Savage*, 173 tons, built at Eden, Maine, 1833.[7, 8]

1833 *Magnolia*, 83 tons, built at Blue Hill, Maine, 1833.[7, 8, 11]

1833 *Horse*, 140 tons, built at Bristol, Maine, 1833.[7]

1840 *Aurora*, 160 tons, built 1840.[7]

1847 *Midas*, converted from two-master.[9]

1849 *Zachary Taylor*, 250 tons, built at Philadelphia, 1849.[9, 10]

1849 *Spray*, clipper, 320 tons, built at Wilmington, Del., 1849; California trade.[9, 10]

Ferrata, *Amora*, *Magnolia*, and *Zachary Taylor* have all been hailed in one account or another as the 'first three-masted schooner ever built.'

J. LYMAN

[1] *Quasi War With France, Operations Nov. 1798-May 1799* (Washington: 1935), p. 109.

[2] C. C. Cutler, *Greyhounds of the Sea* (New York: 1930), p. 38.

[3] H. I. Chapelle, *The Baltimore Clipper* (Salem: 1930), pp. 46-50.

[4] *Essex Institute Historical Collections*, II (1860), 60.

[5] H. I. Chapelle, *The History of American Sailing Ships* (New York: 1935), p. 252.

[6] *Fair Winds*, I, No. 1 (1937), p. 13.

[7] R. B. Forbes, *Notes on Ships of the Past* (Boston: 1885), pp. 151-2.

[8] G. S. Wasson and L. Colcord, *Sailing Days on the Penobscot* (Salem: 1932), p. 40.

[9] Article 'Shipbuilding,' *Americana Encyclopedia*.

[10] *Sea Breezes*, XIX (1935), p. 78.

[11] C. W. Mitman, 'Catalog of the Watercraft Collection in the U. S. National Museum,' *Bull. U. S. Nat. Museum*, No. 127 (1923), p. 6.

News

The Mariners' Museum

Newport News, Virginia. The Mariners' Museum is constructing a new wing to the north of the present buildings which will provide approximately 6,000 square feet additional floor space. The new wing will accommodate the Hague collection of paintings, models, and scrimshaw; the Eldredge steamship collection, which has been recently acquired; the Remington models; and other material now in storage. When the wing is completed, extensive rearranging of exhibits will be effected to more suitably display and group kindred subjects. The Museum has acquired several exhibits from the World's Fair British Pavilion, including a 35-foot model, plaque mounted, of R. M. S. *Queen Elizabeth*. All boats have been removed from indoors and will be displayed in a new roofed colonnade which is being built to accommodate overcrowding in the collection of native watercraft. Notable accessions for the quarter include a bronze statue of Leif Eiriksson, placed opposite the main entrance, and the silver watch of Commodore Isaac Hull. The figurehead of the bark *Belle of Oregon*, mentioned in Mr. William B. Sturtevant's article in The American Neptune, I (1941), 59, n. 1, has recently been presented to the Museum by the Webb Institute of Naval Architecture. Attendance for 1940, surpassing previous years, amounted to over 130,000 persons.

Peabody Museum Marine Associates

Salem, Massachusetts. On 27 January 1941 Stephen W. Phillips spoke on early voyages to Hudson Bay and Baffin Bay, and showed books concerning them from his library. On 24 February R. Jackson Cram, Jr., read a paper entitled 'Some Glances at Early American Life in the Pacific.'

Metropolitan Museum of Art

New York City. An exhibition of the China Trade and its Western Influence will open on 22 April 1941 and close on 22 September.

Steamship Historical Society of America

Salem, Massachusetts. The winter meeting of the Society was held at the Peabody Museum on 28 December 1940. The constitution and by-laws drawn up by Messrs. Jay Allen and William King Covell were adopted and the following officers of the Society elected: Elwin M. Eldredge, Kingston, New York, President; Robert McRoberts, North Plainfield, New Jersey, Executive Secretary; R. Loren Graham, Swampscott, Massachusetts, Treasurer. *Steamboat Bill*, edited and published by Jay Allen of Flushing, New York (reviewed in The American Neptune, I, 1941, 101) was voted the official organ of the Society.

The spring meeting of the Society will take place at the Marine Historical Association, Mystic, Connecticut, on Saturday and Sunday, 19-20 April. The first meeting will take place at 2:00 P.M. on Saturday. Dinner will be at 7:00 P.M., and a business meeting will be held Sunday at 11:00 A.M. Readers interested in attending the meeting or joining the Society are cordially invited to communicate with the Executive Secretary, whose address is 116 Farragut Road, North Plainfield, New Jersey.

U. S. Naval Academy Museum

Annapolis, Maryland. An oil painting by William Elliott, exhibited at the Royal Academy in 1789, of the action between H.M.S. *Serapis* (Captain Pear-

son) and the *Bon Homme Richard* (Captain John Paul Jones), 23 September 1779, and oil portraits of Oliver Hazard Perry, Matthew Galbraith Perry, Captain and Mrs. Samuel Chester Reid were presented to the Museum on 1 February 1941 by The Friends of the Navy, formed through the efforts of Mr. Henry Lockhart, Jr., of New York. The four portraits, until purchased by the donors had always been in possession of the respective Perry and Reid families and the Elliott portrait in that artist's family.

In the Act of Congress, passed in 1818, Captain Reid was officially credited with the design of the National Colors, and the specifications for our flag which for the first time legalized our National Colors in that Act are those in effect today. Captain Reid was in command of the privateer *General Armstrong* when attacked by three British men-of-war in the harbor of Fayal, Azores, 26 September 1814.

Notes on Contributors to The American Neptune

M. V. Brewington, one of the Editors of The American Neptune, is particularly concerned with the history of American shipbuilding, especially in Philadelphia and the Chesapeake Bay region.

Alexander Crosby Brown is Secretary of The Mariners' Museum, Newport News, Virginia.

Lloyd A. Brown is Curator of Maps at the William L. Clements Library, Ann Arbor, Michigan.

William Bell Clark is the biographer of John Barry and Lambert Wickes.

Lincoln Colcord, one of the Editors of The American Neptune, is Secretary of the Penobscot Marine Museum, Searsport, Maine.

Lewis J. Darter, Jr., is a member of the staff of The National Archives, Washington, D. C.

Eldon Griffin is the author of *Clippers and Consuls: American Consular and Commercial Relations with Eastern Asia, 1845-1860.*

Richard W. Hale is a Boston lawyer.

Philip M. Hamer is Chief of the Division of Reference, The National Archives, Washington, D. C.

John Lyman is a member of the staff of the Scripps Institution of Oceanography, La Jolla, California.

Samuel Eliot Morison is Professor of History, Harvard University.

George A. Nelson is Deputy Collector of Customs at Portsmouth, New Hampshire.

Vernon D. Tate is Chief of the Division of Photographic Reproduction and Research, The National Archives, Washington, D. C.

David B. Tyler is the author of *Steam Conquers the Atlantic.*

Arthur C. Wardle of Liverpool, author of *Steam Conquers the Pacific,* has contributed transcripts of Liverpool Custom House records of vessels built at Newburyport in the second quarter of the eighteenth century.

Book Reviews

PAULINE A. PINCKNEY, *American Figureheads and their Carvers.* (New York: W. W. Norton & Co., 1940). 7⅜" x 10", cloth. 223 pages, 32 plates, 11 figures. $4.00.

Despite the excellence of the publisher's part in making this book, no amount of good design, paper, and press work can disguise what is beyond all question the worst conglomeration of carelessness, slovenly research, loose writing, and uncritical choice of materials that this reviewer has ever read.

Merely to catalog all the factual mistakes and misinterpretations would require far more space than is available here; therefore a selection of only the more gross errors will have to serve as examples.

After forty-one pages in which Miss Pinckney describes such ancestors of American figureheads as Roman, Hindu, and Chinese ship carvings, she at last reaches the first evidence she has been able to find of our work: a 'lyon' cut in 1720. The preceding 113 years are dismissed with a single sentence. Even the next fifty years are treated in the most casual fashion with such statements as '. . . records shows the occasional use of the lion as the chief decoration on American ships (page 40)' yet no example cited from 1720 to 1777 mentions anything *other* than a lion.

In considering the influences which affected our carvers we find this (page 32): 'The absence of foreign influence on the art in part accounts for its purity of style and vigor.' The very next paragraph speaks of 'English ceramic figurines and busts' leaving an 'impression on the carver.' Again Samuel McIntire's 'use of chaste details following the *Adam* influence is his greatest contribution to . . . marine decoration.' Other contradictions of the original thesis are found on pages 58, 59, 62, 82, and 89. But to cap all these we read (page 41), 'The English influence was reflected in our terminology.' Is it likely American carvers would have thrown aside their native tongue and studied those of Pierre Puget or Praxiteles for technical terms just to show their independence?

Other statements are equally ridiculous. Students of naval administration will be surprised to learn of what is called a 'Navy Board' (page 79) and 'Navy Commissioners' (page 81) in 1798-99, some seventeen years before that body was created. Historians of naval architecture will be gratified to know the frigate *Potomac* was built at Philadelphia (actually at Washington, D.C.) and that Rush, 'cased up and shipped this day on board the *Traveller*' the vessel's figurehead the five or six blocks which separated his shop from the Navy Yard. An addition to our list of American naval vessels is made by Miss Pinckney on page 105, the 'Sloop of war *Francis Grice*.' The reviewer is happy to see refuted the story maligning the shipwrights of Charleston, S. C., who are said to have built the U.S.S. *John Adams* with two distinctly differently shaped sides. Of course the story is untrue since Miss Pinckney says (page 82) the vessel was built at Norfolk, Virginia. Actually she has confused this vessel with the one built thirty years later. We are sure the custodian of the Naval Academy Museum will be dismayed if he tries to find in his collection the second *Franklin* figure-

head (carved, says Miss Pinckney, in 1853 on page 80 op. and 1864 on page 86); it can be seen in the Marine Transportation section of The Franklin Institute now, although for many years it stood in the grounds of the Naval Asylum, Philadelphia. Naming Bellamy, the Portsmouth, New Hampshire, carver, *John* in one sentence on page 161 and *James* in the next paragraph is a good example of slovenly, careless work. Joshua Humphreys' name is spelled three different ways. In one paragraph 'Schuylkill' is spelled 'Schuyskill' and 'Schuyskil.' Poor old Roger Brooke Taney (page 114), pronounced Tawney, Chief Justice of the United States Supreme Court, becomes 'Tanney' on page 209. The carving firm of Hastings and Gleason whose trade card is reproduced on the lower part of page 136, becomes 'Gleason and Hastings' in the text of the same page. This firm is said to have carved the head for the ship *Gay Head* in 1877 on page 137, and in 1852 on page 149.

Students of the Clipper Era will be delighted to learn that Henry Eckford who died in Turkey in 1832, Christian Bergh who died in 1843, and Noah Brown who died about 1833, were all resurrected like Lazarus in time to build some of the 'Greyhounds of the Seas.' They will also be glad to add Joseph Holmes' cut-off-by-the-yard tramp *Herculean*, 1839, to their roster, since that will push the beginning of the Era back a full decade.

Yet many of these things are trivial compared to some of Miss Pinckney's wishful thinking. On pages 76-77 she describes an extant figurehead (illustrated plate x) which she says came from the ship *Union* built at Salem in 1802. If this were true, it would be an extremely important piece of carving, since there are very few definitely identified heads of that period. Had Miss Pinckney paid the least attention to the costume of the head, she should have been suspicious: it is so clearly Victorian in style. Perhaps then she would have examined the Salem ship registers to learn that the description of the *Union* says 'NO figurehead' and she might have confirmed this by glancing at the fine portrait of the *Union* at the Peabody Museum: again 'no figurehead.' Equally uncritical is Miss Pinckney's acceptance of an old wives' tale about the wreck of the ship *John* of Newburyport, Captain Folger, in the Delaware River in 1797. Captain Folger, she says, salvaged the cargo which quite irrelevantly she lists in detail, and as Folger 'felt particularly attached to the ship's figure, he managed . . . to rescue the figurehead.' Some thirty years later when a light house was put on the shoal, 'the figurehead was taken there where it now decorates the living quarter.' The head illustrated (plate VIII) shows the figure of a young woman. But the Newburyport ship registers say '*John*, ship, Robert Folger, Master . . . figurehead, A MAN.' Miss Pinckney further states that the head, according to tradition, was carved by William Rush and identifies the Philadelphia carver with a Newburyport owned vessel by stating that the *John* may have been the former Continental frigate *Delaware* built in Philadelphia in 1776, captured by the British in 1777, taken to England, and in 1784 sold by the Royal Navy to a Mrs. George Hayley who 'no doubt disposed on her ship at Salem.' Unfortunately for Miss Pinckney's story, the *John*, according to the register was 'built Newburyport 1792.'

As bad as these and other factual presentations of easily demonstrable myths may be, they are trivial compared to the downright distortion of evidence to fit one's own purpose. This is contained in the chapter entitled 'A Figurehead in Politics.' It purports to recount the story of the two Andrew Jackson figureheads carried by the frigate *Constitution*.

Briefly, in 1834 thanks to Oliver Wendell Holmes' poem, the frigate was being rebuilt. Captain – not Mister as Miss Pinckney insists on calling him – J. D. Elliott had Laban S. Beecher carve a full length figure of Andrew Jackson as the head. Boston, hating Jackson as the Devil hates Holy Water, objected in print, picture, and parade. One night Samuel Dewey on a wager, rowed out to the frigate and managed to saw off the upper part of the figure's cranium. So much Miss Pinckney states correctly. Then she says the figure was officially removed and 'placed in a carver's shop,' and the frigate sent to New York where a new figurehead was to be fixed. She next says, 'Mr. Dickson [Mahlon Dickerson, Secretary of the Navy, is probably meant] had caused the American flag to be painted over the figure, so that its arrival in New York would be in the proper manner.' Whether this is a contradiction or just loose writing, is indeterminable from the text. At any rate the *Constitution* reached New York on 9 March. Dodge, the New York carver, who was commissioned to do the new head, stated that he would need six weeks to do a whole new figure, but only two weeks if he did repairs. Dickerson who wanted the frigate sent to France to bring home our minister insisted 'If the head which Mr. Dodge *has been repairing* can be completed sooner than the repair I have directed can be made, let it be done, not otherwise. I am not willing to lose a day.' On Monday 16 March, seven days after the frigate arrived in New York and on the day she sailed for France, the *New York Daily Advertiser* reported:

'On Saturday afternoon the head carved by Messrs Dodge & Sons of this city was placed *on the trunk* representing President Jackson on the bow of the frigate *Constitution*.'

Miss Pinckney, in an effort to force an explanation for the second figurehead, an explanation which her faulty research methods have failed to disclose, deliberately mutilated the above quotation to prove her point. She quotes the *Advertiser* as saying:

'On Saturday afternoon the head carved by Messrs Dodge and sons of this city was placed on the frigate *Constitution*.' Where are the words *on the trunk*?

A photograph of the Beecher figure as restored by Dodge (the piece is now in the Marine Museum of the City of New York); one of the Beecher cranium cut off by Dewey (also in the Marine Museum of the City of New York); and one of the second Andrew Jackson head (now at the U. S. Naval Academy) are to be seen in *Antiques* July 1936, and the first two in *Ship's Figureheads of Old Cape Cod*. Both are listed in the book's sources. Miss Pinckney prints what is possibly the bill for the second head, but she completely fails to recognize it.

Following the text are four appendices. Number 1 is a 'List of Figureheads, Billets, and Stern Carvings. . . . ,' 144 items in all. It has no arrangement discernable to the reviewer and is full of mistakes: for instance, the head of the yacht *America*, is said to be 'On ship, Potomac River, Annapolis, Md.' The gratuitous renaming of the Severn River by Miss Pinckney will not be appreciated by our already harassed map publishers. A 'portrait bust probably of Thomas P. Cope, Merchant of Philadelphia . . . From ship of Cope Line, Philadelphia. Probably from the *Lancaster*' has no foundation in fact. It was bought at public auction, and neither the present nor the previous owner makes any claim whatsoever for its identity. Appendix II, 'Contemporary Descriptions of Figureheads,' gives an assortment of quotations from letters, newspapers, and such sources as 'Boston 1846,' 'Chelsea, January 1851,' or

'Portsmouth, N. H.,' or '1851,' whatever these may be. Appendix III is a 'List of Carvers,' occupying about seventeen pages. While Miss Pinckney does not claim all those listed to be ship carvers, but includes such tradesmen as picture framers, architectural carvers, and coach ornamenters, she has completely overlooked the Pacific Coast. Appendix IV is a 'Bibliography' according to the title, but it follows no standard known to the reviewer. For instance, could any one locate 'General Letter Book II, p. 220, 376'? or 'Journal No. III (1820-1823)'? or 'New York Herald Tribune, "The Shipyards of America" (unknown date)'? The bibliography is arranged by chapters, but there is no section for Chapter IX, and those for Chapters XI and XII are apparently interchanged. An index, thoroughly consistent with the text, brings the book to its end.

M. V. BREWINGTON

ALBERT COOK CHURCH and JAMES B. CONNOLLY, *American Fishermen* (New York: W. W. Norton & Co., 1940). 6¾" x 10", cloth. 192 pages, 262 illustrations, 27 line drawings, end-papers. $3.75.

B. B. CROWNINSHIELD, *Fore-and-Afters* (Boston: Houghton Mifflin Co., 1940). 7½" x 11⅜", cloth. xviii + 100 pages, 64 plates, 7 line drawings. $7.50.

Thirty years ago, when Captain Arthur H. Clark published *The Clipper Ship Era*, schooners were still too common to excite much enthusiasm, and the majority of maritime books published since have dealt with square-riggers. Now that the schooner has all but disappeared we have suddenly realized that the fishermen and coasters should have been studied while there was still time, and a belated enthusiasm has developed. The simultaneous publication of the two handsome picture books of American fore-and-afters shortly before Christmas is a clear indication of this nostalgic interest. Both books are the work of men with a life-long knowledge of the subject and in both the illustrations are admirably reproduced.

Messrs. W. W. Norton & Co. have published a wide selection of Albert Cook Church's photographs of fishing vessels, as a companion volume to his *Whale Ships and Whaling*. Mr. Church's pictures tell their own story, but they are agreeably introduced by James B. Connolly, who has written about fore-and-afters for as many years as Mr. Church has photographed them. After a section of various types of fishing schooners under sail, there are fifty views of shipbuilding scenes, followed by fine documentary photographs of mackerel, cod, haddock, halibut and swordfishing, which show the vessels in action. These pictures will grow in value with the passage of years and the changes of fishing technique, but at any time they will furnish a good evening's entertainment. The photographic record of American whaling and fishing in Mr. Church's pictures makes one wish that he might have been at work with his camera several decades earlier and have captured the details of the merchant square-riggers as well.

Fore-and-Afters, published at the same time by Houghton Mifflin Company, consists of sixty-four plates of direct photographs and paintings collected from a number of sources, with accompanying text by B. B. Crowninshield, the designer of the *Thomas W. Lawson*, the *William L. Douglas* and a large number of other well-known vessels. As Hon. Charles Francis Adams points out in his Introduction to the

book, Mr. Crowninshield is uniquely qualified for such a task both by a life-long experience of marine architecture and by inheritance. An introductory group of plates of lateen rigged vessels, luggers, topsail schooners and pilot boats is followed by cargo and fishing schooners and various sloops, while the last half of the book is devoted to yachts and the men who have sailed them. Mr. Crowninshield's text is really a running commentary on the plates. It contains many colorful anecdotes on a variety of subjects; the methods of measuring tonnage at Essex with drug store booze and cigars (page 12) and of naming Adams yachts (page 89) among them. In discussions of such minutiae of rig as the yard carried by the early three- and four-masters, and in personal reminiscences of the *Thomas W. Lawson* and of such figures as the Crowley brothers and H. M. Bean Mr. Crowninshield is at his best. These details are of such interest that many readers will wish that the publisher's plan had been for a seriously documented history of American fore-and-afters, rather than for a handsome Christmas book of pictures, with a preponderance of yachts, in which the text is reduced chiefly to a commentary on the plates. But picture books sell, while documented histories do not, and it is something, in view of the high cost of illustrations, to have so many good pictures available at approximately ten cents apiece. It is a pity, however, in so agreeably designed a book, that the publishers should have tolerated careless proofreading from their press, as there are various mis-spellings of names of vessels which could not have been in the author's manuscript. Similarly the date of the building of the schooner *William L. Douglas*, given in the text (page 50) as 1902, is allowed to appear in the caption of Plate XXIII as 1908, while in Plate XLIX a caption for a cutter is somehow applied to a two-masted schooner.

WALTER MUIR WHITEHILL

FELIX RIESENBERG, *The Pacific Ocean* (New York: Whittlesey House, The McGraw–Hill Book Company, 1940). Octavo, cloth. 332 pages. $3.00.

This is a short book for so vast a subject. Opposite the title-page we are told that it is the first of a series of books on 'Oceans of the World.' Some of the books to come include such well known 'oceans' as 'The Mediterranean,' 'The Coral Seas,' and 'The Caribbean.' This is our first clue to what lies ahead. Obviously 'The Pacific Ocean' is a 'publisher's book' and, as the unfortunate author was not fully prepared to write on the subject, the result is regrettable.

This book is not a history of the Pacific Ocean but a series of sketches of some of the more dramatic events that have taken place there. The first chapter, six pages, covers several minor items. The geological origin of the Pacific is discussed by references to two theories, one fantastic and the other highly improbable. These refer to the lost continents of Atlantis and Mu, and Wegener's dividing and moving apart of one great land mass. The peoples of the Pacific islands, their origins and their voyages, are disposed of in two pages. Although we are told that the term Polynesian will be used to include all the racial groups of the South Seas, there is still no valid reason for doing so. The inhabitants of Pacific islands include Polynesians, Melanesians, Micronesians, Papuans, Australoids, Pygmies and Japanese: attempting to refer to them all as Polynesians is over simplification. While on the ethnological angle of this work mention should be made of the alleged 'weaving tapa cloth,' on

page 252. Tapa cloth is *beaten* from the inner bast of the paper mulberry and other plants. The majority of the natives of the Pacific who made it were ignorant of weaving in any form.

After a brief chapter on Balboa's discovery of the great ocean, the story of Magellan's voyage is told. In it we find such an illuminating aggregation of words as the following: 'The disappearance of Magellan's personal journals, the disasters that overtook his ships and men and the innermost thoughts and plans of the great discoverer.' Again, in the chapter on Manila galleons we find this gem: 'The Spanish burtons creaked, the mule lifted the loads, the bales and chests were lowered from the bollards, and there were much shouting and whistling and watching by the talleymen and supercargoes.' This chapter on the Manila galleons is remarkable for the detailed descriptions of construction, and of such items as double steering wheels and the slinging of hammocks. On the whole these details sound suspiciously like the United States training ship *St. Mary's*, where Riesenberg obtained his seafaring schooling.

Considering the size of this book an undue amount of space is given to the Spaniards in the Pacific, and not enough to the voyages of the late eighteenth and early nineteenth centuries. A chapter is devoted to the sealers and whalers, but the trade in furs on the Northwest Coast, in sandalwood in the Hawaiian Islands, in 'bêche la mer' (here called 'a worm') and the China trade are only briefly mentioned. On page 116 archaeologists will be surprised to learn that 'the Aztecs drove out the Mayas in Central America,' and on page 146 the author indulges in a 'wisecrack' to the effect that a 'pink' did not refer to the color of a vessel but to the shape.

As for the chapters on Cook and Wilkes, I prefer to read the lengthy originals rather than the voluminous excerpts in *The Pacific Ocean*.

There is no bibliography or footnotes giving references or sources. Occasionally other works are mentioned in the text. Parts of the text are dramatically written and not uninteresting but there are so many inaccuracies that the book is of no historical consequence. Probably many of the errors would have been eliminated had it not been for the author's untimely death. I think the general level of this book can be best judged by the following quotation from the first chapter: 'There is the story of the Chinese sailor Hee Li, whose name is strangely significant in modern pronunciation, who was driven off the coast of China in the year 200 B. C. until he reached the distant land of Fu Sang and explored the coast for 100 miles. He is supposed to have entered the great bay of Hong Tee, said to be San Francisco Bay. But we rather think Hee Li.'

ERNEST S. DODGE

GEORGE W. DALZELL, *The Flight From The Flag: The Continuing Effect of the Civil War Upon the American Carrying Trade* (Chapel Hill, N. C.: University of North Carolina Press, 1940). 6" x 9", cloth. xviii + 292 pages, 22 illustrations and end-paper map. $3.50.

Those reading *The Flight From The Flag* cannot but agree with the author who states (page 2) that 'the Confederate predatory cruisers made a contribution to the Southern cause out of all proportion to their number.' From 30 June 1861 when the *Sumter* slipped over the bar at Pass à l'Outre, to 2 August 1865 when the *Shenan-*

doah, far out in the Pacific Ocean, learned of Appomattox, no United States merchantman was considered safe beyond a limit of one marine league from a friendly shore. Of the eighteen Confederate cruisers that preyed upon Northern shipping, only eight turned in what might be called qualifying scores. But these, *Sumter, Nashville, Florida, Alabama, Tuscaloosa, Tallahassee, Chickamauga, and Shenandoah*, were all champions. Though the narratives of these ships are well known to the historian they are not so familiar to the layman. However historians and laymen alike may read this scholarly compilation with profit, not only for the historiography but also for the proposition it so ably proves namely – that United States merchant shipping has never to this day recovered from the paralyzing blows of 1861-1865. Despite the efforts of the Union Navy, which were often better and more efficient than those of the Federal Armies on land, the Confederate cruisers continued their widespread depredations. The bones of their prey lie in all of the seven seas.

Actual losses in destroyed shipping, while not insignificant, were only a fraction of the total losses suffered by our commerce because of changes in registry – the flight from the flag – induced by fear, as the flight of capital always is. In 1860 forty-one ships were transferred to British ownership. In 1863 there were 348 transfers but the amount of tonnage involved was more than double the ratio of ships. The author concludes that at the close of the War more than half of the United States merchant fleet was lost to the Stars and Stripes – most of it to Great Britain. Once a ship is gone there is no retrieving it. An expatriated ship is denied repatriation under the law.

In 1860 American bottoms carried about 70% of the total of American trade. At the close of the War this position was reversed with foreign bottoms carrying approximately 75% of American trade. If this had only been a temporary condition as a direct result of the Rebellion it would not have been quite so serious. The damage was felt in the permanency of the slump in United States shipping activity, which was not to be regained until World War I (and then only partly) with the advent of 'our bridge of ships' to Europe. Mr. Dalzell summarizes the reasons for the non-recovery of the American shipping trade as follows:

1. The diversion of capital and enterprise to internal development; western railroads, mines, manufacturing, etc.
2. Lack of corporate ownership of vessels, making widespread investment difficult.
3. Deterioration of marine labor both in opportunity and quality.
4. Enlargement of the navy which acquired both ships and men.
5. Adoption of tariff laws restricting free trade.
6. British enterprise in the development of iron hulls and engines.

In bringing his thesis up to date, the author mentions the good effect of the present maritime policy of building and operating subsidies, the naval building program and the acquisition of auxiliaries upon the American carrying trade. With the muddled international situation that confronts us no conclusions can be drawn regarding our sea-going future.

Mr. Dalzell has labored long and with patient research has produced a scholarly volume that bristles with authority. One trifling lapse of scholarship names the C.S.S. *Virginia* and *Merrimac*. The bibliography is imposing but if a suggestion be allowed, it would be to include John Bigelow, *France and the Confederate Navy* (New York: Harper and Brothers, 1888).

CLIFFORD L. SAYRE

WILLIAM ROOS, *The* Hornet's *Longboat* (Boston: Houghton Mifflin Company, 1940). 5¼" x 8", cloth. 240 pages, track chart end-papers. $2.50.

Eclipsing even the famous voyage of the *Bounty's* launch, one of the world's most remarkable open boat voyages was that of the long-boat of the California clipper *Hornet* in 1866. The *Hornet*, commanded by the modest Yankee shipmaster, Josiah A. Mitchell, had made a good passage around the Horn and was wafting her way through the Pacific doldrums when an unfortunate accident ignited varnish and candles in her cargo. There was hardly time to take to the boats and, perforce, provisioning was inadequate. Displaying consummate seamanship, Captain Mitchell brought in forty-three days the 21-foot long-boat and fourteen men, including two passengers, safely to Hawaii, some 4,000 miles from the scene of the accident. The two quarter boats with the balance of the crew of thirty-one were lost.

The bare facts of this remarkable voyage insure a dramatic powerful story, but we regret to report that the novelization by Mr. Roos does not do justice to the available material and is not comparable in this respect with Nordhoff's and Hall's *Men Against the Sea* for the *Bounty*. The book displays numerous avoidable weaknesses; unimportant incidents are over dramatized at the expense of vital ones. Captain Mitchell is cast as the narrator and the novel purports to be in his words; had any of the other persons in the long-boat been selected, inaccuracies in seamanlike reporting might have been condoned. Space precludes specific mention of actual examples, but it should be noted that the author entirely misses the significance of the spiritual sustenance which the Captain's log so clearly points out as having been the company's salvation.

Since he has obviously failed to consult contemporary shipping lists to verify his interpretation of difficult handwriting in the Captain's log, the author might be interested to learn that the schooner which brought the survivors from Hilo to Honolulu was the *Alberin* and not the *Alheim*. Likewise, it was customary to sign letters with the abbreviation of 'obedient' servant, not 'old.'

Mark Twain was in the Sandwich Islands when the *Hornet's* boat arrived. Returning to America in the same ship, he made extracts from the journals kept by the captain and the two passengers, which were later inserted in a published article. In commenting on these journals Mark Twain stated that therein is 'literary gold, . . . not improvable by anybody's art.' We fear that Mr. Roos' alchemy has only served to reduce it to a baser metal.

ALEXANDER CROSBY BROWN

SHIO SAKANISHI [ED.]. *A Private Journal of John Glendy Sproston, U.S.N.* (Tokio, Japan: Sophia University, 1940). 7¼" x 10¼", paper. xii + 122 pages, 19 illustrations. $2.00. Monumenta Nipponica Monographs, Series on Early American-Japanese Relations. [Available in the United States from P. D. Perkins, Oriental Bookseller, 1640 Mission St., South Pasadena, California.]

A manuscript entitled 'private journal of John Glendy Sproston sent in an unfinished state, not expecting to have an opportunity of forwarding it so soon. Will correct on reaching home, if I live. . . . Eight months after its commencement. Hongkong, Sept. 1854. *Macedonian*' was purchased for the Library of Congress in 1926

and deposited in the Division of Manuscripts. In making it available in print for the first time, Dr. Sakanishi has added a valuable original source to the relatively meager documentary record of the Perry expedition. The strictly censored letters, notes and journals of the expedition were collected, utilized for the official *Narrative* . . . and the private papers subsequently returned to their respective owners. The history of this particular journal is obscure; apparently it was not used in compiling the official account of the expedition, and although the author did live through the following two years of the cruise, he never made the promised corrections in the text. Consequently many foreign words and names are missing or incomplete. The editor, drawing upon other sources in English and Japanese, has been able in most cases to fill these gaps.

The journal begins on board the *Macedonian* at anchor in Yedo Bay, Japan, February 1854, and covers the period from that date until the departure from Japan late in June, the voyage to Keelung and to Manila. There are occasional interpolations in the hand of Kidder Randolph Breese, temporarily attached to the *Macedonian*. The concluding pages are devoted to Manila and include notes on American merchant ships in port at that time. An appendix contains supplementary official and other documents, a brief bibliography and an index.

The principal merit of the journal lies in the personal comments and observations of the writer, and in the many pen and pencil sketches. Unfortunately many of the drawings are incomplete, but nineteen have been selected and reproduced. These range from drawings of harbors, coast lines and ports to buildings, personages and watercraft. The editorial notes and comments are of great value in elucidating and extending the text; it is significant to note that in 101 pages of text there are one hundred and sixty-one footnotes. The book was printed in Japan on inferior paper, and as the editor was unable to see and correct proofs, there are some amusing but insignificant typographical errors.

V. D. T.

WILLIAM BLAIN, *Home is the Sailor: the Sea Life of William Brown Master Mariner and Penang Pilot* (New York: Sheridan House, 1940). 5½" x 8½", cloth, 253 pages, 5 maps, portrait and map end-papers.

A sailor's reminiscences have much of the quality of a motion picture script of vivid scenes merging into a completed picture; yarning has long since removed the commonplace together with surplus verbiage. Related as an autobiography, this is the story of Captain William Brown, a Scotch sailor, trained in sail, serving as Master in steam and finally as Master Pilot in Penang in the last golden era of the fabulous East. From his first voyage in 1888 in the barque *Chilian*, in which he was wrecked three voyages later on the coast of Patagonia, to his voyage home from Penang, no page will be skipped by those who enjoy a rousing good sea story.

As a second mate with a Master's ticket in a time of depression, a chance meeting with a friend home from the East paved the way for his career in the Orient. In the *Amboyna*, on a regular run from Rangoon to Penang through uncharted and dangerous waters, Captain Brown practised methods of navigation strongly reminiscent of Peter B. Kyne's famous 'dog barking navigator' of the Pacific Coast. Later he became a member of the Master Pilots Association of Penang serving through

what it is now customary to call the 'first world war,' and witnessed the raid made by the *Emden* on Penang. In the 1920's, the East levied its toll. This book is not a mere relation of facts and incidents. It is filled with shrewd insight into human nature and observations which may explain why Captain Brown was known to his friends as 'lucky Brown.'

V. D. T.

DANA THOMAS BOWEN, *Lore of the Lakes, Told in Story and Picture* (Daytona Beach, Florida: Pub. by the Author, 1940). Octavo. 314 pages. 93 illustrations. 40 colored diagrams of funnel markings. End-paper chart of Great Lakes. Chronology of lake events. Appendices. Index. $3.50.

Mr. Bowen has produced a grab bag of material on the Great Lakes. Although many of the items are interesting, the material is not sufficiently correlated to be of much permanent value. It is weak and somewhat schoolbookish for the early period, but is at its best on steamships from the end of the past century down to the present. As in the average miscellany, some utterly useless items are found to the exclusion of really important material, as for example the inclusion of a completely irrelevant conversion table for Roman and Arabic numerals, which may be opposed to insufficient mention of canal building, of lake shipyards and their almost universal side launchings infrequently found elsewhere in the world, and insufficient analysis of whalebacks.

The chief merit of the book lies in the photographic illustrations which represent a fine collection. A few errors include: 'Clipper Ship' lines on the 1812 *Niagara*; luxuries in steamboat appointments emanated from Long Island Sound and not the Atlantic, for American ocean steamships were fairly plain until the Collins Line of the 1850's. The format is average, but ships' names should have been italicized. Next to illustrations the chief interest of the book is its 'yarns' which are good reading if grim on the shipwreck side.

A. C. B.

KENDALL BANNING, *The Fleet Today* (New York and London: Funk & Wagnalls Company, 1940). 5" x 8", cloth, xiv + 346 pages, illus., end-paper maps. $2.50.

At a time of rapid expansion authentic information about the United States navy is at a premium. In two previous books devoted respectively to Annapolis and West Point, the author has described cadet life. In this book a detailed picture of the daily life, training and opportunities of an enlisted man in the navy is presented. Prospective recruits, beginning service men and laymen generally will find it informative and interesting reading. The book was prepared with the aid of the Navy Department and is plentifully illustrated with official photographs, charts and statistics. A chapter is devoted to a listing of ships in commission, building and authorized. An appendix contains a list of men-of-war disposed of in accordance with the treaties of Washington, 1923 and London, 1930, a list of United States naval service schools and the text of the new naval policy covering two ocean operations. An index has been provided.

V. D. T.

THOMAS C. SKINNER (Artist), *The United States Lines Steam Ship* America. . . . (Newport News, Virginia: The Mariners' Museum, 1940). Lithograph, hand water-colored: August Dietz, Jr., Lith., after drawing by T. C. Skinner. Engraved surface, 12⅛" x 22½": matted, 21" x 29". The Mariners' Museum Print Series No. 1. $12.50.

The Mariners' Museum, by its close association with a great shipyard, is uniquely fitted to preserve records of the maritime present of the United States, as well as of the past. The publication of a colored print of the passenger liner *America*, 35,440 tons displacement, the largest steamship to have been built in the United States, leaving the shipyard at Newport News on 27 July 1940, is a particularly appropriate manifestation of this dual interest. Although the vessel is the last word in modernity, the print is conceived in the style of the mid-nineteenth-century lithographs which were once the standard decoration of shipping offices. The inscription:

The United States Line Steam Ship *America* Leaving the plant of her Builders, The Newport News Shipbuilding and Dry Dock Company, On Saturday, July 27th, 1940. This print is most respectfully dedicated to Homer L. Ferguson, Esqre President, And to the Officers and Directors of the Company, by their obedient humble Servants: Harold S. Sniffen, Thos C. Skinner, & Alexder C. Brown.

is entirely in the spirit of the nineteenth-century print. The print was produced by offset lithography in grey ink from a pencil drawing by Mr. Skinner, and each proof has subsequently been hand water-colored. As the edition is limited, the print is clearly not designed for wide popular circulation, but it is safe to predict that it will enjoy the same popularity in present-day shipping offices that its prototypes enjoyed seventy-five and more years ago.

W. M. W.

Ship Registers of New Bedford, Massachusetts, Volume II, 1851-1865 (Boston: The National Archives Project, W. P. A., 403 Federal Building, 1941). 8½" x 11", paper. xviii + 339 mimeographed sheets. Available from The National Archives Project, 403 Federal Building, Boston.

The most recent product of the National Archives Project in Massachusetts in the plan for publication of ship registers and enrollments described by Mr. Hamer on page 165 of this issue. The Massachusetts Project deserves high praise for its efforts in making these invaluable documents available for general use, and it is hoped that the ship registers of Boston, which have already been entirely copied, will shortly be published. It is unfortunate, though natural, that records of such permanent reference value should be mimeographed on an impermanent pulp paper. It would be highly desirable to raise a sum of money (by advance subscription or any means that would not conflict with government regulations) that would insure the publication of the Boston registers in a more durable form. Great credit is due Lieutenant John W. McElroy, USNR, former state supervisor of the National Archives Project, and his successor Mr. John J. O'Brien, for the manner in which they have carried out this useful plan in Massachusetts.

W. M. W.

HAROLD AUGUSTIN CALAHAN, *Rigging* (New York: Macmillan Co., 1940). 5″ x 7¼″, cloth. 276 pages, 62 illustrations. $3.00.

Valuable treatise by prolific yachting authority, bringing subject up to date. Food for thought in: 'There is not a ship of the "great era of sail" that could not be re-rigged today by a studious and intelligent yachtsman. And the yachtsman would do the job better than the original rigger. His work would be stronger, simpler, handier.'

RAY KAUFFMAN, *Hurricane's Wake: Around the World on a Ketch* (New York: Macmillan Co., 1940). 5½″ x 8¼″, cloth. 319 pages, 25 photographs and end-paper world map. $3.00.

Interesting account of 'round the world voyage in a 45-foot Florida built ketch. Unusually forthright description of author's and companion's affairs of gallantry in South Pacific. Dull and stereotype beginning but warms to a good narrative. No dates given.

MARCUS GOODRICH, *Delilah* (New York: Farrar & Rinehart, 1941). 5½″ x 8″, cloth. 496 pages. $2.75.

A well-written novel by a former Navy man with the scene laid in Philippine waters in 1917 on the U. S. Destroyer *Delilah*. It goes a long way to explain why sailors seem 'queer' to landsmen and vice versa.

JAMES R. JACK, *Some Historic Ships and their Models in the Francis Russell Hart Nautical Museum* (Cambridge, Massachusetts: Massachusetts Institute of Technology, 1941). 6″ x 9″, pamphlet, 29 pages.

After a brief account of the background of the Francis Russell Hart Nautical Museum, Professor Jack introduces a museum project of 'having a series of models to include all of the types of ships which . . . influenced America from the earliest to the most recent times.' Six models, namely, Leif Ericson's Norse trader, the *Santa Maria*, an Elizabethan galleon, the *Susan Constant*, the *Half Moon* and the *Mayflower* are briefly described and illustrated.

H. BIRCHARD TAYLOR, *'I Build Men as well as Ships'* (Philadelphia: Cramp Shipbuilding Co., 1941). 6″ x 9″, pamphlet. 15 pages, 2 illustrations.

An address on the life of William Cramp, founder of Cramp's Shipyard, delivered by his great-grandson, H. Birchard Taylor, at a memorial service in the First Presbyterian Church of Kensington, Philadelphia, on 5 January 1941. Readers will be pleased to see the imprint: 'Published by Cramp Shipbuilding Company, Philadelphia, 1941,' as no such notation has appeared for thirteen years.

EDWARD ROWE SNOW, *The Story of Minot's Light* (Boston: Yankee Publishing Co., 1940). 6″ x 9″, cloth. 139 pages, 19 illustrations, chart, diagrams, indexed.

Splendid history of lighthouses erected on unprotected Minot's Ledge, Massachusetts.

DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE, *Salem Maritime National Historic Site* (Washington, D. C.: U. S. Government Printing Office, 1940). 8" x 10½", pamphlet. 16 pages, 12 illustrations, two small maps. Available from the Superintendent of Documents, Washington, D. C. 5 cents.

Brief account of Salem shipping and the establishment of the Salem Maritime Historical Site, which includes the Salem Custom House, Derby Wharf, the Derby house, and adjacent buildings.

UNITED STATES MARITIME COMMISSION, *Report to Congress for the Period ended October 25, 1940* (Washington, D. C.: U. S. Government Printing Office, 1941). 5¾" x 9", pamphlet. 52 pages. Available from the Superintendent of Documents, Washington, D. C. 10 cents.

Official report containing much valuable information on the program of the Maritime Commission illustrated by numerous tabulations and statistical compilations in eight appendices.

UNITED STATES MARITIME COMMISSION, *America Builds Ships: The Program of the United States Maritime Commission* (Washington, D. C.: U. S. Maritime Commission, 1940). 5½" x 8½", spiral binding, pamphlet. 64 unnumbered pages. Available for free distribution. Address, Director of Information, U. S. Maritime Commission, Washington, D. C.

Elements of background and program of the U. S. Maritime Commission, principally charts and graphs in colors, minimum of text.

UNITED STATES MARITIME COMMISSION, *New Ships for the Merchant Marine* (Washington, D. C.: U. S. Government Printing Office, 1940). 6" x 9", pamphlet. 23 pages. Available for free distribution. Address, Director of Information, U. S. Maritime Commission, Washington, D. C.

Description with principal characteristics of the types of ships being built in the construction program of the U. S. Maritime Commission, includes characteristics, statistics and glossary; illustrated from photographs and drawings.

The Instrvcion Nauthica of 1587

WITHOUT question the *Instrvcion Nauthica*[1] is one of the most interesting nautical books ever written. The complete title-page which is reproduced herewith may be transcribed as follows: 'INSTRVCION | NAVTHICA, PARA EL BVEN | Vso, y regimiento de las Naos, su traça, y | y govierno conforme à la altura de Mexico. | Cõpuesta por el Doctor Diego garcia de | Palacio, del Cõsejo de su Magestad, | y su Oydor en la Real Audiẽ- | cia de la dicha Ciudad. | Dirigido, al Excellẽtissimo Señor Don Aluaro Manrrique, de çuñiga, Marques de Villa manrrique, Virrey, Gouer- | nador, y Capitain general destos Reynos. | [coat of arms[2]] Con licencia, En Mexico, En casa de Pedro | Ocharte. Año de 1 5 8 7 | ,' which in English would read in part, NAUTICAL INSTRUCTION, FOR THE PROPER Use and management of Ships, their planning, and navigation according to the latitude of Mexico. Compiled by Doctor Diego de Palacio, of His Majesty's Council, and his Oydor[3] in the Royal Audiencia[4] of the said city. . . .

Written at a time when Spain was the predominant nautical power in the world, and while feverish preparations were being made to equip a great armada for an invasion of England, the book is remarkable in that it provides much basic data for an understanding of Spanish maritime greatness. It details the manner in which ships were built, how they were manned and sailed, the terms used by the seamen in their work, and the art and science of navigation as then understood. It is the first book ever printed to contain much of this information. Ships, for example, were traditionally built by rule of thumb. Experience and calculation served instead of plans and specifications. This practice was to remain almost universal for anóther half century, yet the first known printed plans for the construction of ships were here reproduced. Included also are instructions and the first printed illustrations of the proper manner of making sails of every type. These too are exceptional. The book contains the first marine dictionary in Spanish, probably in any language, ever to be published. It is one of the foundation stones of nautical science, and its importance cannot be overestimated.

The work is divided into certain prefactory matter: an introduction, four books, each containing a number of relatively short chapters, and a supplementary marine vocabulary. Immediately following the title-page, the reverse of which is blank, appears the required license for printing which occupies one page. In the license it is stated that the book was submitted to the general and the chief pilot of the fleet then in the harbor of San Juan de Ulloa; both highly commended its value to navigators and shipbuilders. A two-page dedication to the viceroy is followed by a three-

[1] This spelling appears on the title-page; running title-pages throughout the book read INSTRVCION NAVTICA.

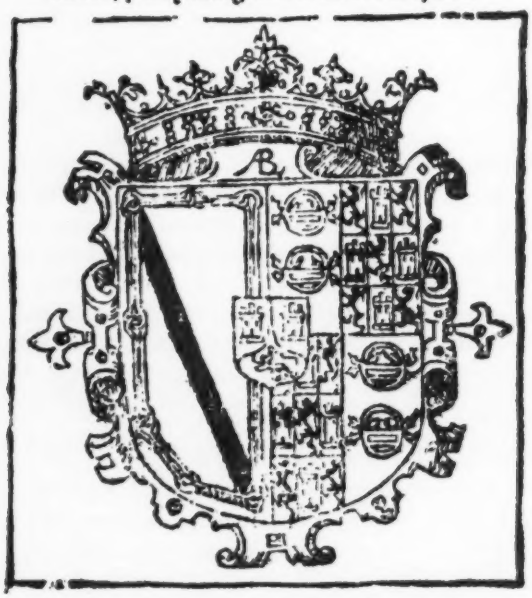
[2] The coat of arms is that of Viceroy Álvaro Manrrique de Zúniga who served as Viceroy from 1585 to 1590.

[3] Judge.

[4] The Real Audiencia was a legal body composed originally of eight judges (Oidores) who heard civil cases, four who heard criminal cases, two state lawyers, a bailiff and other minor officials.

page table of contents, and the text begins.[5] The author selected a contemporary device as a method of presentation and wrote in the form of a dialogue or series of conversations between a Vizcayan and Montañez.

INSTRVCION
NAVTHICA, PARA EL BVEN
Vſo, y regimiento de las Naos, ſu traça, y
y gouierno cõforme à la altura de Mexico.
Cõpueſta por el Doctor Diego garcia de
Palacio, del Cõſejo de ſu Mageſtad,
y ſu Oydor en la Real audiẽ-
cia de la dicha Ciudad.
Dirigido, al Excellẽtiſsimo S. ñor Don Aluaro Manrrique, de
çuñiga, Marques de Villa manrrique, Virrey, Gouer-
nador, y Capitan general deſtos Reynos.

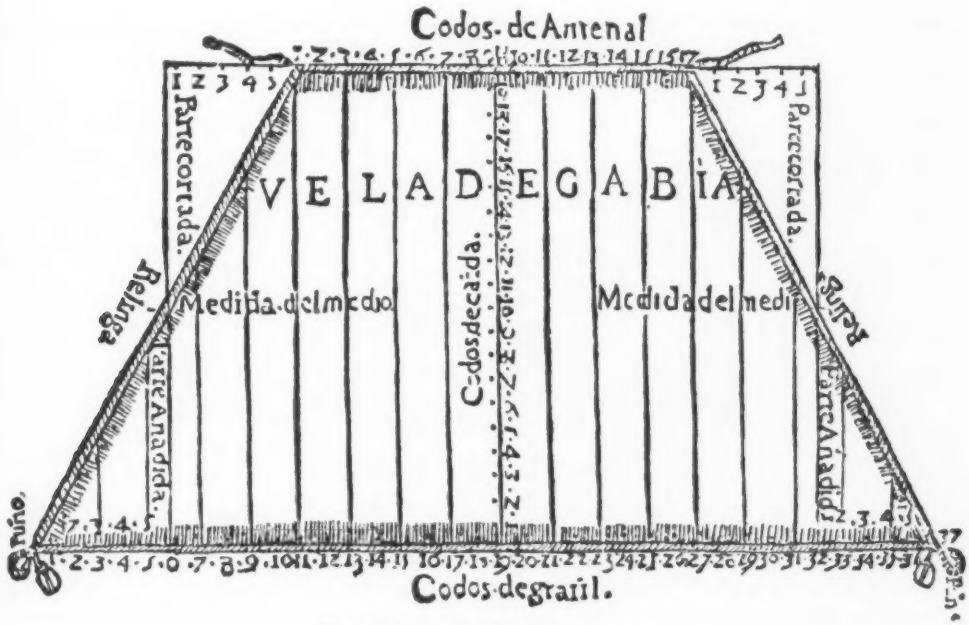


Con licencia, En Mexico, En caſa de Pedro
Ocharte. Año de 1587.

Book I occupies pages 1 to 49 and consists of nine chapters. The introduction preceding Chapter one is a general discussion plentifully sprinkled with marginally

[5] Following the frequent practice of the time, the obverse of the sheet only is numbered. There are 156 numbered sheets equivalent to 312 pages. In conformance with usual practice the writer has referred to the obverse of a numbered sheet by number alone, while the reverse of a numbered sheet carries the number followed by the letter v to indicate that it is a verso page.

noted citations from the Bible, classical and ecclesiastical writers. The remainder of Book I is devoted to nautical astronomy and instruments, including the astrolabe, the cross-staff, and the compass. A set of declination tables occupies pages 15v to 23. Book II of nine chapters extends from pages 49v to 64. It is also devoted to mathematical considerations and rules. Book III of three chapters including pages 65v to 87v contains additional material relating to mathematics and navigation including sea charts and their use, and a set of lunar tables computed for the years 1586-1604. The first three books, or a little more than half of the entire work, contain practically no new material, but are in effect condensations of current information culled from existing printed sources. They are significant only because they were written with



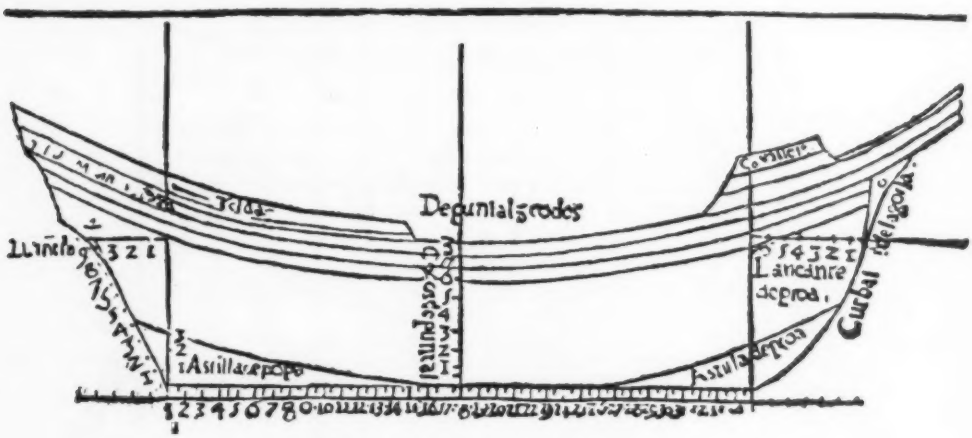
Topsail for a ship of 400 tons
page 106v

the latitude of Mexico in mind.[6] If the author had contented himself with this more or less academic discussion, the book would have been merely noteworthy as the first American contribution to the science of navigation. The remaining sections of the treatise, consisting of Book IV and the marine dictionary, however, are of supreme importance, for to quote from page 87v, they deal with matters which 'have not previously been written.'

Book IV is made up of thirty-five chapters and extends from pages 88 to 128v. The first chapter deals with the elements of ship construction and discusses measurements and other factors governing the size of vessels in terms of the dimensions of a ship of 400 tons. Proportions, characteristics and measurements of the types of ships used

[6] Lawrence C. Wroth, *The Way of a Ship; an essay on the literature of navigation science*, 55-56.

in the New World are set forth. The foundation of modern shipbuilding is laid in the discussion of the value of drawings in understanding the construction of ships illustrated by four plates on pages 93v and 94, and by five plates on pages 96, 96v and 97. The latter pertain to a smaller vessel of 150 tons. Masting, sparring and rigging are meticulously discussed mast by mast. The succeeding chapters form the first printed manual on sail-making. A main course, bonnet,[7] topsail and a mizzen are described and illustrated on pages 104, 104v, 106v and 107. Later chapters deal with the ship's boats, pumps, anchors, cables, boatswain's stores and ship chandlery. Twelve chapters are devoted to the officers and crew; the duties of the captain, master, pilot, caulker, carpenter, barber, surgeon, seamen and other ratings aboard



Sheer plan of ship of 150 tons
page 96v

ship are set forth in detail. General discussions on warships, attack and defense complete Book IV. The final section contains the 'Vocabulary of the names used by seamen for everything belonging to their art, arranged alphabetically,' which occupies pages 129 to 156v.

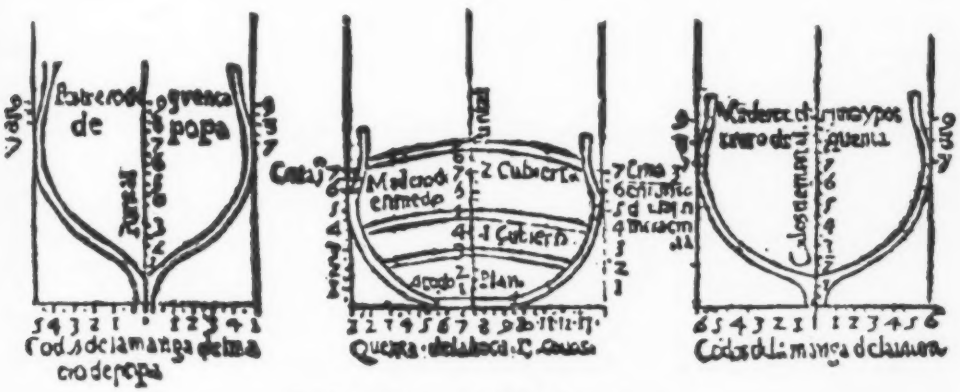
The value of the *Instrucion Nautica* is emphasized by its rarity. There are copies in the Library of Congress, the New York Public Library, the John Carter Brown Library and the Huntington Library in San Marino, California. Besides these, only one other copy is known to exist in the United States, and it appeared in a dealer's catalogue in 1938 priced at $3,000.[8] Sabin remarks that this small quarto volume is 'one of the scarcest productions of the early Mexican press.' In all, there are perhaps a dozen copies in the entire world.

Relatively little is known of the life of the author, Diego Garcia de Palacio, who is sometimes erroneously called Palacios. He was descended from the families of Pala-

[7] Used at this date in place of reefs. A bonnet was laced or toggled to the foot of the sail, and removed to shorten sail.

[8] A microfilm copy, however, similar to that from which this essay was prepared can be had for about $5.00 from the Photoduplication Service of the Library of Congress or from the New York Public Library.

cio and Arce who had distinguished themselves in the Royal service, and was the eldest of five children. One brother died in the battle of Lepanto; another was killed in a naval engagement near Malta; a third died in Naples, an Alferez in the Royal navy; while the fourth and youngest entered the navy at an early age and was living in 1578. Diego, although equally interested in the navy, received a legal education and was sent in 1576 to Guatemala. His report on the Indians there was published and widely translated. While in Guatemala, he became interested in the conquest of the Philippines and addressed memorials to the King on the subject. In this connection he wrote a military treatise entitled 'Dialogos Militares de la formacion é informacion de personas, instrumentos, y cosas necessarias para el buen use de la guerra . . .' printed in Mexico by Ocharte in 1583,[9] which was intended to instruct



Body sections of ship of 150 tons
page 97

gentlemen in the art of war in order that they might take part in the subjugation of the Philippines. In 1587 he was entrusted with the pursuit of Drake in the Pacific. He came to Mexico City in 1579 and was active there for a number of years, although his later career is unknown.[10] He was considered one of the foremost writers of the sixteenth century by the Spanish Academy, and the archaic but well-written Spanish manifested in the *Instrucion Nautica* and other writings is still good reading.

From an historical standpoint, the *Instrucion Nautica* is a most important basic marine text of enduring value. It is eminently fitting that it should inaugurate the series of maritime classics in THE AMERICAN NEPTUNE, for it is the first American contribution to maritime science and the first in the world to deal with the technicalities of the construction of ships. Unfortunately the text has never been translated into English, but it is possible that this defect will be remedied in the more or less immediate future.

VERNON D. TATE

[9] Noted by Sabin as 'extremely rare.'

[10] Martin Fernandez de Navarrete, *Biblioteca Maritima Española*, I, 331-337.

Marine Publications of American Museums and Institutions

As museums and public institutions rarely advertise their publications, certain books and pamphlets of considerable historical value often fail to secure the circulation which they deserve. By the same process books are often assumed to be out of print when considerable quantities are still cluttering the stock rooms of the institutions which published them. The following list of marine publications of various non-commercial institutions which are still in print and available at published prices is included in THE AMERICAN NEPTUNE, without cost to the publishers, as a service to readers. Available books of the Marine Research Society are included, as that Society will issue no further titles and will go out of business when the present stock is sold. Otherwise books of commercial publishers have been omitted from the list.

ADDISON GALLERY OF AMERICAN ART

Andover, Massachusetts

Hollis French, *The* Thatcher Magoun, *An American Clipper Ship, Her Owners, Captains, and Model, with a Foreword by Allan Forbes.* $3.50

ESSEX INSTITUTE

Salem, Massachusetts

Gardner W. Allen, *Our Navy and the West Indian Pirates.* $2.50

American Vessels captured by the British during the Revolution and War of 1812: The Records of the Vice-Admiralty Court at Halifax, N. S. $2.00

Francis B. C. Bradlee, *Marblehead's Foreign Commerce, 1789-1850.* $3.50

Francis B. C. Bradlee, *Piracy in the West Indies and its Suppression.* $3.50

Early Coastwise and Foreign Shipping of Salem: A Record of the Entrances and Clearances of the Port of Salem, 1750-1769. $5.00

Louis F. Middlebrook, *History of Maritime Connecticut during the American Revolution.* 2 volumes. $6.00

Old Time Ships of Salem, 3rd edition, 23 color plates. Paper, $5.00; Cloth, $5.75

G. G. Putnam, *Salem Vessels and their Voyages.* 4 volumes, $10.00; Separate volumes, $2.50

Ship Registers of the District of Newburyport, 1789-1870. $5.00

INDIA HOUSE

Hanover Square, New York City

A Descriptive Catalogue of the Marine Collection to be found at India House [including 'The Port of New York: an historical sketch' by Carl C. Cutler]. $25.00

MARINE HISTORICAL ASSOCIATION, INC.

Mystic, Connecticut

The following numbers of *Publications of the Marine Historical Association, Inc.,* have been distributed without charge to members of the Association. Particulars of membership may be obtained from Mr. Carl C. Cutler, Secretary.

Carl C. Cutler, *Important Types of Merchant Sailing Craft,* Vol. I, no. 1.

Log of Ship Hurricane *from New York to San Francisco, 1854,* Vol. I, no. 2.

Louis F. Middlebrook, *The Last Cruise of the* Oliver Cromwell, *1779*, Vol. I, no. 3.

Extracts from the Journal of John A. States, 'A Visit at Pitcairn's Island,' Vol. I, no. 4.

Carl C. Cutler, *A Brief Survey of the Early Shipping Industry in the Northern States*, Vol. I, no. 5.

Edward E. Bradley, *Before the Mast on the Clipper Ship* Mary Whitridge *of Baltimore*, Vol. I, no. 6.

C. K. Stillman, *The Development of the Builders' Half-Hull Model in America*, Vol. I, no. 7.

John T. Perkins' Journal at Sea, 1845, Vol. I, no. 8.

P. LeRoy Harwood, *The Development of Whaling Implements*, Vol. I, no. 9.

Louis F. Middlebrook, *The Laws of Oleron or the Judgments of the Sea: A.D. 1375*, Vol. I, no. 10.

Barnard L. Colby, *New London Whaling Captains*, Vol. I, no. 11.

T. A. Stevens and C. K. Stillman, *George Greenman & Company, Shipbuilders of Mystic*, Vol. I, no. 12.

Captain Charles Hervey Townsend: Self-Portrait of an American Packet Ship Sailor, Vol. II, no. 1.

MARINE RESEARCH SOCIETY

Salem, Massachusetts

Howard I. Chapelle, *The Baltimore Clipper*, Pub. no. 22. $6.50

Charles G. Davis, *The Built-up Ship Model*, Pub. no. 25. $5.00

Charles G. Davis, *Shipping and Craft in Silhouette*, Pub. no. 20. $2.50

Charles G. Davis, *Ships of the Past*, Pub. no. 19. $10.00

G. F. Dow, *Slave Ships and Slaving*, Pub. no. 15. $5.00

F. P. Harlow, *The Making of a Sailor*, Pub. no. 17. $5.00

Wesley G. Peirce, *Goin' Fishin': The Story of the Deep-sea Fishermen of New England*, Pub. no. 26. $5.00

George S. Wasson and Lincoln Colcord, *Sailing Days on the Penobscot*, Pub. no. 24. $5.00 (also a limited edition at $10.00).

THE MARINERS' MUSEUM

Newport News, Virginia

Alexander Crosby Brown, *Lake Maury in Virginia*, Pub. no. 1. 30 cents

S. B. Besse, *U. S. Ironclad* Monitor: *With Data and References for a Scale Model*, Pub. no. 2. 30 cents

M. V. Brewington, *Chesapeake Bay Log Canoes*, Pub. no. 3.

Part I, text: Paper, $1.25; Cloth, $1.50

Part II, plates: $1.00

S. B. Besse, *C. S. Ironclad* Virginia: *With Data and References for a Scale Model*, Pub. no. 4. 50 cents

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